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ORIGINAL COMMUNICATIONS.

ON CONICAL CORNEA.

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My attention was some years ago directed to that singular change in the eye, to which English writers have applied the term CONICAL CORNEA; and I communicated with many eminent ophthalmic surgeons on the subject, besides instituting experiments myself. The information which has resulted, though throwing less light than could have been desired on the true nature and management of this intractable disease, possesses a considerable amount of interest, and, combined with other materials, will form the subject of this article.

Conical Cornea does not seem to have attracted the attention of oculists until within the last hundred years; and the first writer who makes mention of it is John Taylor, in his *Nova Nosographica Ophthalmia*, printed at Leipsic, in 1766. Leveillé has usually had the credit of the first recorded observation, but Taylor preceded him. Von Ammon was the first to notice the circumstance of its being, in some instances, a congenital defect, and also an hereditary peculiarity. He connected with it a singular form of the head. "It is worthy of remark", says he, "that also in this *hyperkeratosis congenita*, a peculiar form of the head obtains; viz., the so-called pointed head (*spitskopf*). I have once noticed this in a family of sisters, who were all affected with congenital hyperkeratosis". Mr. Wilde also inclines to this opinion; but in Anne Reeder, whose case will hereafter be mentioned, the head was singularly elongated in the antero-posterior direction. There are not sufficient data yet to decide whether Conical Cornea and Conical Crania have any constant co-relation.

Conical Cornea appears to be peculiar to the human species; and so far as my inquiries have gone, it is limited to civilized races. To ascertain whether it exists in the brute creation, I applied to Mr. Percival, the distinguished veterinary surgeon, who states that it certainly is not found in horses, and in his opinion, does not appear in any of the lower animals.

There are not, however, sufficient grounds for denying the possibility of its occurrence amongst them, especially if, as will hereafter be shewn, it is one of the results of inflammation; for with Squirrels, staphyloma, and leucoma, other results of inflammation, are common diseases; and in Lemurs also, I have observed examples of the same. In one instance there was a very fair specimen of a "conoidal globe".

It would appear as if Conical Cornea were a disease prevailing most in warm climates and warm situations, and becoming more and more rare as we approach the colder latitudes. Sir John Richardson informs me, that he "observed no cases of Conical Cornea among the inhabitants of the northern regions of America. Conjunctival ophthalmia is exceedingly common among the Indians and Esquimaux, and often terminates in blindness and opacity; but diseases of the humours, or ball of the eye, are not common". Conical Cornea is almost unknown in the north of Germany; and Himly, who has written on the subject, never saw a case. In the north of England it is less common than in the south and west, and in Scotland rarer than in England. Dr. Mackenzie has communicated to me, that of 15,924 cases treated at the Glasgow Eye Infirmary, only four were Conical Cornea. Dr. A. Anderson, of Glasgow, has only seen two cases since 1842. Dr. Cadenhead, of Aberdeen, says that, "out of upwards of at least 8000 eye patients who have applied to the Aberdeen Ophthalmic Institution, and to the Royal Infirmary Ophthalmic Wards, under my charge, I have only seen three cases—two females and one male"; and Mr. Walker, of Edinburgh, tells me that, of 7679 patients at the Edinburgh Eye Dispensary, there was *not one* instance of Conical Cornea. Compare with this the returns from China, where, of 6787 cases, no less than twenty-two were examples of this disease; from Dublin, where, of 4050 cases, ten were Conical Cornea; and from Plymouth, where, of 5118 cases, thirteen were Conical Cornea. Moorfields, too, presents a large number—as many as twelve in one year, and ten in another. Mr. James Dixon, the able surgeon to that noble institution, mentioned to me a curious fact,—that he had been looking out for an example of this disease during a whole year without success, when, on a certain morning, no less than three patients presented themselves quite independently of each other, and each with the disease well marked. In the table of returns (*see next page*), I have only given those of Moorfields for the Metropolis, as patients suffering from Conical Cornea would be likely to seek relief at several institutions, and might thus be reported from each. Mr. Smith, of Southam; communicated to me, in 1847, that within the preceding year or two, he had seen no less than eight cases; and observes, that "they have generally agreed in a few things; they have been temperate, generally water drinkers, they lead sedentary lives, and have all come from a district of the country where a soft brown stone prevails in the earth".

APPEARANCES AND FREQUENCY. The terms, 'Cornea Conica', 'Staphyloma Pellucidum Conicum', and 'Conical Cornea', are expressive of the alteration in the form of the Cornea which forms the distinguishing characteristic of the disease. But before the change in the outline of the cornea is sufficiently marked to be obvious to the casual observer, an unusual brilliancy of the eye is visible; a lustre which has been

TABLE, SHOWING THE PROPORTION OF CASES OF CONICAL CORNEA.

	Total Cases.	Con. Corn.		Total Cases.	Con. Corn.		Total Cases.	Con. Corn.
GLASGOW EYE INFIRMARY.			ROYAL LONDON OPTHALMIC HOSPITAL,			BRISTOL EYE INFIRMARY.		
June 1824 to Jan. 1847 ...	15924	4	MOORFIELDS.			1814.....	107	1
ABERDEEN HOSPITAL AND EYE INFIRMARY.	8000	3	1839.....	4891	2	1815.....	170	1
EDINBURGH EYE INFIRMARY.			1840.....	5355	10	1816.....	208	0
Jan. 1842 to Jan. 1850 ...	7679	0	1841.....	5528	5	1817.....	467	0
MACAO HOSPITAL.			1842.....	6085	7	1818.....	488	1
1841 to 1842	1288	7	1843.....	6572	0	1819.....	516	0
1844 to 1845	5499	15	1844.....	6874	12	1820.....	706	0
ST. MARK'S HOSPITAL, DUBLIN.			1845.....	7005	4	1821.....	679	2
1845.....	980	2	1846.....	7010	9	1822.....	751	0
1846.....	1526	6	1847.....	7672	5	1823.....	895	3
1847.....	1544	2	1848.....	8382	6	1824.....	1153	0
PLYMOUTH EYE INFIRMARY.			LIVERPOOL EYE INFIRMARY.			1825.....	1239	0
1845.....	936	3	1834.....	1770	2	1826.....	1294	3
1846.....	848	9	1835.....	1986	0	1827.....	1365	1
1847.....	918	3	1836.....	1965	4	1828.....	1385	5
1848.....	1203	4	1837.....	2186	0	1829.....	1174	0
1849.....	1213	3	1838.....	2189	0	1830.....	1245	5
MANCHESTER EYE INFIRMARY.			1839.....	2230	0	1831.....	1227	0
1834.....	1383	1	1840.....	2186	0	1832.....	1374	1
1837.....	1486	1	1841.....	2224	2	1833.....	1350	0
1843.....	1638	1	1842.....	2244	2	1834.....	1388	2
1844.....	1156	1	1843.....	2287	1	1835.....	1516	1
1845.....	1536	2	1844.....	3078	3	1836.....	1647	1
			1845.....	3462	3	1837.....	1823	3
			1846.....	3510	2	1838.....	1911	0
			1847.....	3721	0	1839.....	1921	1
			1848.....	3798	1	1840.....	2151	4
						1841.....	2141	2
						1842.....	2363	1
						1843.....	2393	4
						1844.....	2245	4
						1845.....	2346	2
						1846.....	2160	4
						1847.....	2095	3
						1848.....	2110	1

aptly compared to the sparkling of a diamond, especially in a well-lighted room at night, and which, by adding to the expression of his eyes, afforded considerable consolation to an actor who was the subject of this malady.¹ The brilliancy partly arises from the great number of rays reflected, and partly from the excessive refraction of those rays which penetrate the cornea. If we examine an eye in which the disease is commencing, it will be seen that the anterior chamber is unusually large, the cornea more prominent than natural, and that the outline, having lost its sphericity, has a pyramidal form (Fig. 1). The position of the iris is not altered; as the disease advances (its progress being

¹ "The most pointed cone I ever saw was in a clever comedian; he could only see to read three inches from his eye, and it gave the most peculiar character to the expression of his face on the stage I ever beheld: he thought the disease serviceable in that way." *Extract of a letter from H. L. SMITH, Esq.*

usually very slow), the change in form becomes more decided, and the cornea assumes such an appearance as would be presented were a dew-drop attached to the front of the eye. Mr. Wilde is of opinion, that when this conformation is congenital, the axis of the cone is seldom in the middle of the cornea, but is either above, below the centre, or to one side. No further change may take place, and the cornea may remain in the condition described,

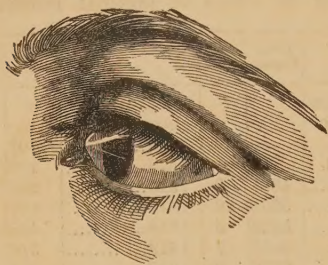


Fig. 1.

for a very long period, as happened in the case of an old lady, at Plymouth, related to me by Dr. Butter, in which the Conical Cornea had undergone no change during thirty years; or the deformity may attain so large a size as to prevent the closure of the lids, as was the case in a cook, a patient of Mr. Isbell, of Stonehouse (Fig. 2). A common change, however, is the formation of a speck of opacity at the extremity of the cone, and a considerable amount of lymph is at times deposited about that spot (Fig. 3).

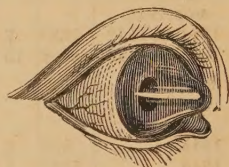


Fig. 2.

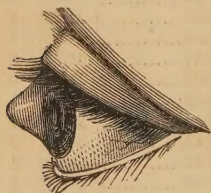


Fig. 3.

chipped out.

To the unassisted eye, the surface of the cornea appears smooth and even; but under a lens, it is seen to be broken up by elevations and depressions, as pointed out by Sir David Brewster. Of the existence of these irregularities, I have many times satisfied myself; and, in one case of double Conical Cornea, there were five dimples distinctly seen in one eye, and seven in the other. This condition is probably dependent on unequal absorption, some portions having been removed whilst others remain.

The change of form generally implicates the whole cornea, but there are exceptions, of which the following is an interesting example. "I have seen", says Mr. Middlemore,¹ "one instance of this affection occurring only very partially, for the conical portion of the cornea was only as large at its base as the plane surface of a small split pea. It existed at the lower part of the cornea, resembled a small and extremely conoidal portion of beautifully transparent glass placed upon the surface of the cornea, and occasioned great confusion of sight from the unequal

¹ A Treatise on the Diseases of the Eye, vol. i, p. 533.

refraction of the rays of light". A somewhat similar case fell under my own observation, where the disease was clearly traceable to an ulcer, which, in healing, had left a dimple, or loss of substance in the cornea, and this dimple became the apex of the cone. A just distinction has been drawn between *true Conical Cornea*, in which the alteration in figure is confined to that membrane, and another change in form, the *conoidal eye*, which commences in the sclerotic at the insertion of the recti muscles, and is the consequence of inflammation. Fig. 4, taken from a patient of mine, is a good illustration of this disease.

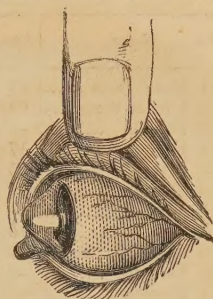


Fig. 4.

In almost all the cases I have seen, both eyes have been affected, although seldom to the same degree. The disease usually attacks one first, and sooner or later, the other. Mr. Wilde states, that "when congenital, both eyes are usually affected, whereas, when it occurs in after life, it is very frequently in but one". I have not been able to satisfy myself that any of the cases examined by me have been congenital, nor does the frequency of its being confined to one eye accord with my own experience; and I believe that it is occasionally overlooked in the early stage. Of forty-eight cases, three presented it in the right eye, eleven in the left, and in thirty-four, both eyes were affected, as will be seen by reference to the table. (*See next page.*)

It would seem to develop itself most frequently about the period of puberty, and to be rare in children and old people. The respective ages of fifty-six patients were as follows:—

Under 10	...	...	...	...	2	Between 40 and 50	...	...	5
Between 10 and 20	..	...	...	...	15	— 50 and 60	...	...	0
— 20 and 30	..	...	...	...	24	Above 60	...	...	2
— 30 and 40	...	...	...	...	8				

I have no doubt that in the cases entered as above sixty, the disease has been of old standing, and I think it rarely commences much after forty. The total number of ophthalmic cases from which my calculations have been made, is 208,970. Of these, one hundred and ninety-four only were examples of Conical Cornea, giving a general average of 1 in 1077·16.

The averages of the special returns are as follows:—

Macao	1	in	308·50	London	1	„	1089·56
Plymouth	1	„	393·69	Manchester	1	in	1199·83
Dublin	1	„	405·00	Liverpool	1	„	1941·80
Bristol	1	„	857·19	Scotland	1	„	4514·71

SYMPTOMS. Conical Cornea from its earliest commencement renders the individual near-sighted; and if the change in the configuration be considerable, the eye is rendered almost useless. The patients can then only discern objects when held very close and to one side. When looking at a book, for instance, they regard it obliquely, a peculiarity which gives a singular expression to the countenance. The gentleman who favoured me with the drawings, from which figures 5, 6, 7, 8, and 9 have been taken, stated, that although under ordinary circumstances he could not distinguish objects further from the eyes than three inches,

TABLE OF CASES OF CONICAL CORNEA.

No.	Name.	Age.	Eye affec.	Occupation	No.	Name.	Age.	Eye affec.	Occupation
1	Mary Boys	27	Both	Dressmr.	37	Emma Roberts	14	—	—
2	Louisa Wright..	24	Both	Milliner	38	Louisa Gill ...	20	—	Unknown
3	Female	—	Left	Milliner	39	Female	—	—	Housem.
4	Female	17	Left	Sempst.	40	Female	—	—	Cntry. gl.
5	Female	25	Both	Sempst.	41	Lady	71	Both	—
6	Female	17	—	Sempst.	42	Lady	35	—	—
7	Female	—	Both	Milliner	43	Lady	16	—	—
8	Mrs. Saker	40	Both	Cook	44	Lady	14	Both	—
9	Margaret Fitch.	25	Both	Cook	45	Harriet Smith	8	Both	—
10	Female	—	Both	Cook	46	Lady	19	Both	—
11	Female	—	Left	Cook	47	Lady	31	Both	—
12	Jane Matthews	38	—	Cook	48	Mr. Chapman .	—	Both	Med. stu.
13	Harriet Melrose	29	Left	Cook	49	Male	17	Both	Tailor
14	Eliza Richardson	27	Left	Cook	50	Male	29	Both	Shoemak.
15	Female	—	—	Lady's m.	51	Joshua B.	47	Both	Unknown
16	Female	25	Both	Unknown	52	John Bentley..	28	Both	Unknown
17	Female	—	—	Unknown	53	Joseph Diggles	—	Both	Unknown
18	Female	16	—	Unknown	54	Robert Ingram	20	—	Unknown
19	M. E.	22	Both	Lady	55	Evan Folks ...	52	—	—
20	Hannah Hudson	28	Left	Unknown	56	Wm. Matthews	29	Both	Unknown
21	Anne Holland...	21	Both	Unknown	57	Thos. Kennedy	47	—	Unknown
22	Phoe. Greenhalgh	28	Both	Unknown	58	Wm. Harrison	38	—	Seaman
23	Margaret Evans	14	—	Unknown	59	Male	—	—	Baker
24	Elizth. Oxford...	25	—	Unknown	60	Male	—	—	Grocer
25	Emma Housley.	26	Both	Sempst.	61	Male	—	—	Farmer
26	Jemia. Smithson	31	Left	Glover	62	Male	—	Both	Unknown
27	Mary Hall	18	Left	Shoebind	63	Mr. J. D.	20	Both	Med. stu.
28	Hannah Rogers	24	Rt.	Servant	64	M.	—	Both	Comedian
29	J. Macnamara..	11	Rt.	—	65	John Parker...	19	Both	Glassblr.
30	Arabella Thomas	19	Both	Servant	66	Geoffry Carter	26	—	Blacksm.
31	Maria Martin ...	23	Both	Servant	67	James Cook ...	32	Left	Tailor
32	Ann Reeder ...	17	Both	Servant	68	Rd. Macdonald	40	Rt.	Surveyor
33	Female	70	Both	—	69	Male	30	Left	Schoolm.
34	Mrs. H.	40	Both	Lady	70	Luke Gibbon...	23	Both	Carpetwv
35	M. A. Roberts...	18	Both	—	71	Jas. Crawford .	9	Left	—
36	Margaret Gibb	22	—	Unknown	72	E. H. G.	31	Both	Solicitor

yet, by making pressure upon the temples, vision was increased to six inches. The integuments were pushed forward so as to press slightly on



Fig. 5.
Appearance of halo surrounding a
parlour-lamp.

the globes, and I ascertained that the object was equally attained by direct pressure upon the temporal side of the globe, thus altering its antero-posterior diameter. Luminous objects are frequently described as being surrounded by rings or belts, and are sometimes multiplied in number; phenomena arising from the irregular refractions caused by the elevations and depressions of the surface of the Cornea. In some instances the vision is much benefited by dilating the pupil with belladonna, as in the case of an old clergyman, mentioned by Mr. Lawrence, who was, for thirty years, the subject of this affection; and yet was able, by

the use of belladonna and the nitrate of silver, to continue his duty in the pulpit, with tolerable accuracy, up to the time of his death. In several instances in which I tried it, not the slightest advantage was derived. In a few instances vision has been improved by looking through a pin-hole aperture; but in many others this also has failed.

The descriptions attached to the five figures are those written by the patient at the foot of each.

CAUSES. Much uncertainty prevails as to the precise nature of the changes which take place in those cases of Conical Cornea, which bear no satisfactory history, nor are traceable to any evident exciting cause.

In a large majority of such cases, we find that the disease is in connexion with an enfeebled state of constitution, and a low condition of the nervous energy; a condition, therefore, in which the *vis vitæ* is impaired, and some at least of the organic functions are imperfectly performed.

It has been demonstrated that the cornea, in its natural condition, is not traversed by blood-vessels; that the arteries and veins from which it derives its nutriment form a circle around it, but having barely penetrated its circumference, go no further. We may, therefore, conclude, that the cornea would speedily become sensible of any deficiency in the supply of new material, should the exudation of that material be interrupted. The materials for the repair of the waste of the membrane, (which waste, in common with that of other tissues, is

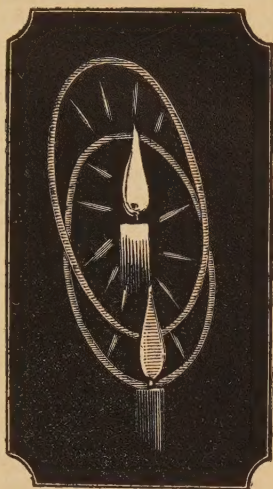


Fig. 6.

Usual appearance of belts surrounding luminous bodies. After gazing at any light for a short time, the belts and rays are so increased in number as to present the appearance of a mass of fire.

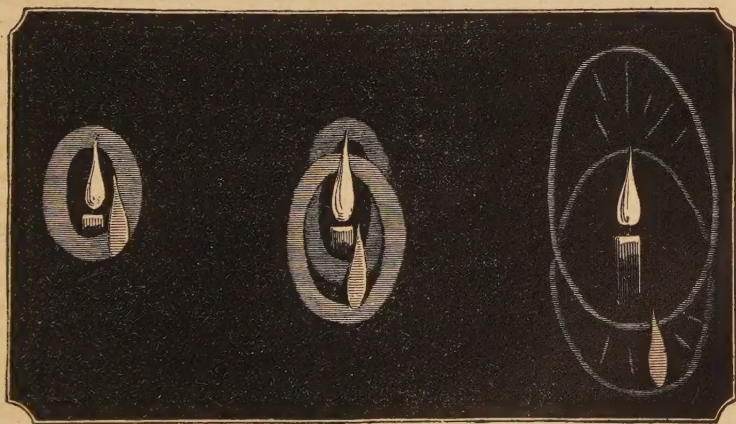


Fig. 7.

Appearance of belts surrounding the flames of three candles placed equi-distant from each other.

constantly in progress), are derived from the blood, each tissue being endowed with the power of selecting such constituents of the blood as are best suited to its composition. If then, there should be any interruption to the supply of particles capable of entering into the composition of the cornea, we might expect to find a change taking place in the structure of that membrane: the old material is being constantly removed by the absorbents, but the supply of new material to repair the waste is arrested; and as the centre of the cornea is the point furthest removed from the source of supply, it might be expected that that part of the membrane would exhibit the change consequent upon the interruption of supply in the most marked manner.

The effect then would be, that the pressure of the muscles of the globe acting upon its contents, would squeeze them forward; and the centre of the cornea, being the point of least resistance, would be projected into a conical form.

We have good reasons for supposing, that, in many instances, Conical Cornea is the result of congestion. Of forty-two cases in which the occupation of the parties was known, there were seven cooks, ten dress-makers and needle women, three tailors, a carpet-maker, a surveyor, a schoolmaster, a glass-blower, a blacksmith, and a baker, all employments having a direct influence in causing determination of blood to the eyes.

Strong presumptive evidence of the existence of congestion is afforded by the uneasiness in the eyes which often accompanies this disease.

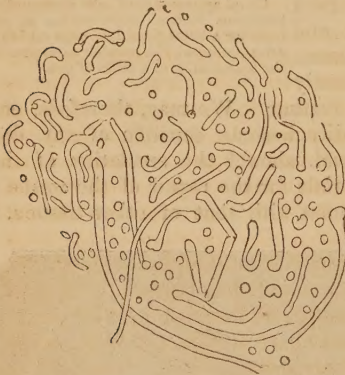


Fig. 8.

Muscae volitantes seen on looking at a luminous object.

This symptom has scarcely ever been absent in the cases which have fallen under my own observation; and it has varied in degree from a sensation of discomfort to a positive pain of a dull aching character. A cook, whom I have recently seen, with Conical Cornea in both eyes, complained of pain, tenderness, and sense of distension of the globes. Another symptom indicating congestion is the frequent occurrence of muscae volitantes. Of seven patients whom I questioned, six described the appearance of these annoying phantasms as being of daily occurrence. We have, therefore, sufficient ground for connect-

ing the conicity of the cornea, in many cases, with congestion, occurring in combination with deficient nervous energy and feeble power. Persons who appear most subject to Conical Cornea, are those in whom asthenic choroiditis is frequently observed; and the supposition is not unreasonable, that the same influences which produce congestion of the choroid, may be exciting causes of Conical Cornea, by interrupting the circulation in the corneal zone of vessels.

If the vessels of a part are deficient in nervous energy, they will be



Fig. 9.

Fixed Musca, seen chiefly during reading.

in a condition favourable for the occurrence of congestion, their power of vital resistance or tonicity being impaired. Excitement of the sensitive nerves of the cornea calls forth antagonistically, according to Henle's principle, a state of depression—a temporary paralysis of the motor nerves of the contractile fibres of the walls of the small arteries, opening into the capillary network of the conjunctiva and sclerotica adjacent to the cornea; the effect will be, first, relaxation and dilatation of those arteries, and then accumulation and stagnation of blood in the capillaries. If the capillaries which surround the cornea and supply it with nourishment are thus deficient, congestion will speedily arise, and the effect will be to diminish the exudation of nutrient fluid from them, and consequently to interrupt the process of assimilation in the membrane. Then the centre of the cornea, being the most distant point, will exhibit the deficiency in the most marked degree; and the balance of nutrition and absorption being lost, attenuation of that part will occur. If we suppose the congestion to go somewhat further, and lymph to be thrown out, we may expect to find the margin of the cornea thickened, whilst its centre is unusually thin.

Ulceration of the cornea is sometimes followed by that membrane assuming the conical form. It is not surprising, that a spot deprived of the anterior elastic lamina, should be thereby weakened, and less able to resist the pressure from behind. In such cases, the dimple or cicatrix of the ulcer usually forms the apex of the cone.

Conical Cornea is, undoubtedly, a frequent consequence of inflammation of the membrane; particularly when modified by struma. Dr. Mackenzie informs me that he has seen it associated with scrofulo-catarrrhal ophthalmia, with opacities, and with pterygium; Dr. Butter of Plymouth has seen it after purulent ophthalmia, and after ulcers of the cornea; such also has been my experience. Dr. J. C. Hall relates a case in which it followed syphilitic iritis; and it has been pointed out by that gentleman, and also by Mr. Wilde, that when Conical Cornea is the sequel to inflammatory action, the abnormal curvature is not limited to the cornea, but commences about the insertion of the recti muscles in the sclerotic. I have seen a well-marked example of this, and the form of the eye has been aptly compared to that of the eyes of raptorial birds. The opinions of Dr. Jaeger of Vienna are, at all times, entitled to the highest respect, and I may here introduce an interesting and important letter with which he favoured me.

“Vienna, June 1, 1847.

“Sir,—Having had occasion to observe cases of *staphyloma pellucidum* during a space of forty years, I consider it to be the result of a specific inflammation of the cornea veritatis, or a symptom of this inflammation. In the first case, excepting a Conical enlargement and greatly increased expanse of the cornea, with more or less opacity of the projecting part, there is nothing morbid, and the functions of the eye would be well performed, were it not for the faulty form of the cornea. In the second, besides the conical form of the cornea there is inflammation of the eye present, but especially of the cornea, and the opacity and conical shape of the cornea are merely symptoms of the inflammation. The opacity of the cornea may be looked upon as the redness of inflammation elsewhere, and the cone is induced by the loss of elasticity in the tissues, and the softening of the cornea itself.

"The thickness of the cornea varies. In the first series of cases it is thin and membranous at the apex: in the second class, it is double, or even three times its natural thickness, the tissues being soft, loose, and swollen.

"The character of the inflammation which gives rise to staphyloma pellucidum, is generally scrofulous, such as affects fibrous and cartilaginous tissues; but rheumatic and syphilitic inflammations, especially when combined, also tend to induce this deformity. It may be observed, and that not uncommonly, as a result of gonorrhœal ophthalmia. The loss of the outer or conjunctival layer of the cornea will give rise to this affection; but the why and the wherefore are not yet sufficiently explained. Staphyloma pellucidum is rarely congenital; it is generally developed during the first years of life, and sometimes at a more advanced period; but being once developed, it is never lost. The prognosis is doubtful. A cure is only to be thought of in the commencement of the disease—the inflammatory stage; this past, treatment is for the most part useless.

"The indications are, to treat rationally the existing inflammation as regards its nature, degree, and character. If the staphyloma be a *residuum morbi*, medicinal application we find avail not; neither can benefit be afforded by operative means. Extraction of the lens and formation of artificial pupil, accomplish nothing towards a cure—or something very imperfect. The same may be said with respect to the partial removal of the cornea. This is all that I am able to say upon this subject.

DR. FR. JAEGER."

By Dr. Jacob, of Dublin, who is a high authority, Conical Cornea is considered as a decided result of true corneitis. "I am prepared (says he) for a denial of the correctness of this statement, that the *staphyloma pellucidum* or Conical Cornea, is owing to the disease under discussion (true corneitis); but I nevertheless venture to insist upon it, because I have seen and traced the change from its commencement to its termination, more than once. That there should be doubt and difference of opinion on the subject is not surprising, because true corneitis is not a very common disease, and the change in shape to the conical is not a frequent consequence of it. The alteration takes place in childhood; for the disease generally occurs at that period of life, and, after the inflammation has disappeared, and the opacity has been dissipated, no defect except this conical state remains. . . . That I have seen the cornea become opaque from corneitis, then conical, and finally perfectly transparent, I am quite positive; but not only have I seen this, but also have I seen it become distinctly conical, in a case of a common idiopathic inflammation of the eyeball in a man of middle age, although not transparent or resembling the true staphyloma pellucidum."¹

Dr. Mackenzie also has known it to arise from corneitis, and informs me of an interesting case—that of a young lad in whom it followed a blow with a snow-ball.

Several authorities agree that it may be the result of excessive weeping, the most striking illustration of which, is afforded by the following case, related to me by Dr. Farre, the Nestor of English ophthalmic physicians.

¹ A Treatise on the Inflammation of the Eye-ball, p. 196.

"Many years ago I was called in to see a young lady under the following circumstances. She was one of two sisters who were devotedly attached and scarcely ever apart. Her sister died; and so excessive was the poor girl's grief for her loss, that for several months she never ceased to weep—tears constantly stood in her eyes. The effect of this constant excitement of the organs of vision, was to produce, first, Conical Cornea in a marked degree, and secondly, opacity not only of the apices of the cones, but of the whole of the cornea, rendering them quite leucomatous; and this condition could only be relieved in a very trifling degree." Mr. Square, of Plymouth, informs me that he has seen a great many cases of Conical Cornea, that the subjects of it were principally delicate females, and that the cause has apparently been traceable to grief and the depressing emotions of the mind. Mr. Tyrrell told me, shortly before his death, that he had seen a case very similar to that related by Dr. Farre. That excessive weeping should induce Conical Cornea is not surprising, when we bear in mind that it would have the effect of keeping up a continued state of congestion of the eyes, combined with compression of the globes,—circumstances highly favourable for the development of the disease under consideration.

Conical Cornea is described by many writers as the occasional result of violent muscular contractions and convulsive efforts. A case of a man who was hanged, recorded in the first volume of Haller's *Disputationes Chirurgicae*, is generally quoted as a striking illustration. It was addressed from Rostock, by C. Burgmann, to Heister, in 1729, and is illustrated by a plate, which fortunately enables us to form our own opinions as to the probability of the case. The globes of the eyes are represented as retaining their proper form, but the corneæ have been squeezed into two processes, which reach to the end of the nose, and in shape, resemble the swim-bladder of certain fishes. The length of each would be about an inch and a half, and the breadth at the base about half an inch; and the question which naturally arises is, with what can these sacs have been filled? The globes retaining their form, it cannot be lens and vitreous humour; and aqueous humour would not be secreted so quickly, or distend the corneæ so violently, without bursting them. My own impression is, that the case has been much exaggerated; for if hanging produced such effects, the case would scarcely be a solitary one.

PATHOLOGY.¹ The late Sir William Adams, with more confidence than accuracy, gave it as his decided opinion, that Conical Cornea was the result of a morbid growth and thickening of the substance of the cornea. In this opinion he stands nearly, if not quite alone, and every fact that has been ascertained, is adverse to it. The rarity of the affection renders opportunities of examining such diseased eyes after death very uncommon; consequently, much interest attaches to the autopsies which have taken place. It may be mentioned, that a difference of opinion exists as to the precise form of the healthy cornea. Krause, of

¹ I regret that I have not been able to refer to the writings of M. Sichel on Conical Cornea: he informed me by letter that they are contained in the Second Supplement to the *Annales d'oculistique* for 1843. Singular to say, the supplementary numbers are not contained in any of the sets to which I have had access in London, and I have therefore been unable to consult the papers in question.

Hanover, states that the cornea is thicker at the circumference than the centre, rendering the exterior surface nearly spherical, the interior parabolic. Mr. Bowman and others are of opinion, that the thickness of the cornea is equal throughout, and that the two surfaces are perfectly parallel. I have taken some pains to satisfy myself on this point; and, I incline to the latter opinion, though, from the difficulty attending the examination of the cornea in what may be considered its perfectly natural state, the point is not yet satisfactorily established.

More than one instance is recorded, where a Conical Cornea has been burst; and the tenuity of the membrane when the disease is far advanced, but before it has become opaque, may be ascertained by pressing upon it with a probe. The sharpness of the margins of the depressions, and the absence of that toughness which characterises the natural Cornea, sensibly indicate its thinness, which is fully confirmed by the following accounts of necropsies. Mr. Middlemore states,¹ "I have had one opportunity of examining, after death, the state of the cornea, which was affected with Conical Cornea in an extreme degree; and in that instance, its laminae were less moveable, its circumference was of a natural and ordinary degree of thickness, but its apex was much thinner than usual, and rendered opaque on its exterior only, for its neural surface, even at the apex, was perfectly transparent; in other respects, it did not appear to have undergone any change, unless I mention that alteration in the evenness and equality of its surface, discovered by Dr. Brewster, but which was not visible to the naked eye." The late Mr. Walker, of Manchester, informed me that he had examined a similar eye. "There was", said he, "great attenuation of the cornea throughout its entire substance, especially at its central portion." From Dr. Butter I learn, that in cases which he has examined, the cornea became thicker towards the base, and thinner in the centre. Dr. J. C. Hall writes,—"Some years ago I examined a case after death. I cannot, at this moment, find a note of the case; but I am certain that the circumference of the cornea was of the usual thickness, and that the apex was very much thinner than natural. The changes also appeared confined to the exterior; the neural surface was bright even at the circumference". Professor Jaeger, of Erlangen, has published the result of the dissection of a case, as follows: "When the cornea was taken between the fingers, there was distinctly perceived a depression in the centre, surrounded by a thick, prominent ring. On making a section of the cornea through its centre, the middle third was found three times thinner than natural, like thin writing paper; the two outer thirds were manifestly thickened, a condition which was especially conspicuous in the central lamellæ, but not in the most external or internal. The middle substance was homogeneous; the thickening of the external part was gradually lost in that which had become thin, so that the diameter of the latter was about equal to that of the expanded pupil."

It would appear, therefore, that the principal changes which take place, are in the anterior elastic lamina, and cornea proper; the former losing its toughness and power of resistance, the latter being diminished in thickness and cohesion towards the centre, and, in some cases, thick-

¹ A Treatise on the Diseases of the Eye, vol. i, p. 532.

ened towards the circumference. In future cases, it will be interesting to ascertain whether the anterior elastic lamina and its filaments of connexion, can still be traced, and what is the precise condition of the cornea proper during the various stages of the disease.

The treatment of Conical Cornea will form the subject of another communication.

(To be continued.)

19, Berkeley Square, March 1850.

THE TYPES OF DELIRIUM TREMENS, THEIR PATHOLOGY AND TREATMENT.

By JAMES BIRD, A.M., M.D.

IN the following paper, I propose to consider the types of DELIRIUM TREMENS, or rather the pure form of this disease in relation to sequent and kindred affections of the brain, caused by the intemperate use of alcoholic drinks, aided by other predisposing causes.¹ The types of the disease are at present variously arranged, in nosological systems, as *Delirium Tremens nervosum et traumaticum*, *phrenesia potatorum*, *encephalitis tremefaciens*, *delirium afebrile tremens*, and *irritative fever of drunkenness*. I am not aware that there exists any description of Delirium Tremens, embracing its modifications and complications, which can be considered practically applicable as a guide to the treatment of the disease in all its varieties. I shall, therefore, describe the disease in its simple form and in its complications, characterizing each by a distinct definition; so that the relations and differences of the modifications may be at once seen, and made the foundation of a like modified treatment. The facts and illustrations of this paper are taken from numerous cases, received into the European General Hospital at Bombay, from the beginning of 1836 to the end of 1840, and which were treated either by the hospital assistants or myself.

The most usual divisions of this disease have been into two species; the one succeeding the excitement of hard drinking, without any intermediate abstinence from the accustomed stimulus; the other, attacking habitual drunkards soon after the accustomed stimulus had been withdrawn. The former may be considered as a state of *hyperæsthesia*, and increased vascular action in the nervous centres, or in the remote organs

¹ Many of the erroneous principles acted on, at various times, in practical medicine, have been drawn from narrow-minded views of the specialities of diseases, considered as *entities*, and without reference to the analogies of their phenomena. Nosology, to be of real practical utility in medicine, must have its foundation in the relations which exist between modified states of disease, each leading to important points of practice. The influence which one class of morbid functional derangements has in modifying the conditions of subordinate functions in other classes, should be made an important consideration in our study of diseases affecting different tissues, but associated in their phenomena and progress, as originating in derangements common to all their modifications.

acting on them ; the other, a state of *hypæsthesia*, or exhausted nervous sensibility and diminished vascular action of the capillaries, more nearly akin to congestion than inflammation. Dr. Stokes, of Dublin, thinks that the pathological condition of the former consists of gastritis, accompanied by excitement of the brain and nervous system ; and recommends that its treatment should be that of gastritis : but that in the other case, the functions of the brain are disturbed, by the abstraction of an accustomed stimulus, and that the appropriate treatment must be to restore that stimulus, and administer porter, wine, brandy, and opium. The division of the disease into stages, as adopted in Dr. Blake's well known and excellent monograph, is chiefly applicable to the pyrexial variety, wherein constitutional predisposition has been established by typhoid influences, or whatever impairs the vitality of the system, such as inanition, immoderate mental exertion, intemperate habits, impoverished food, and malarious emanations ; but these stages are altogether absent, or, in general, imperfectly developed in the other forms. The sedative influence of *malaria* and of *alcoholic stimulants* on the nervous system, has a natural tendency to produce a stage of depression or temporary collapse, followed by one of erethism, and terminated by one of nervous and capillary relaxation, such as characterize the *pyrexia* ; and though, like fever, Delirium Tremens is frequently a compound affection of the nervous, circulating, and secretory systems, it is frequently met with without being associated with any derangement of the latter, and without the characteristic stages of febrile disease. The only divisions of it, therefore, should be such as are founded on leading differences of characteristic phenomena, and which may guide us to some practical modifications of treatment. These differences seem to point out the modifications of Delirium Tremens under four forms—the *simple*, *inflammatory*, *pyrexial*, and *epileptic* ; which, with the predisposing and exciting causes of the disease, the character of the nervous erethism and mental alienation accompanying the several forms, their pathology and treatment, I now propose to consider.

There is no one symptom which may be considered as an essential character of the disease ; its leading features are insomnia, excited agitated manner, constant loquacity and reverie, with tremor of the hands, and sometimes a fidgetty employment of them. The patient, who has lost the power of attention and association of ideas, when awakened to a sense of consciousness by a question addressed to him, answers generally to the purpose, and does whatever is required of him ; but, being unable for any length of time to fix his attention, or control his volition, he immediately after wanders from the scene around him, and relapses into incoherency.

It is difficult to give any true or concise description of Delirium Tremens. It may, however, be thus defined.

DEF. *A disease which manifests itself, after hard drinking, or the long-continued and free use of narcotico-stimulant substances ; and is characterized by insomnia, exalted sensorial function, rapidity of thought, mental hallucination or illusions of sense, tremor of the tongue or limbs ; delirium occasionally associated with inflammation or fever, a cold clammy perspirable state of the cutaneous surface, seldom recovered from without a critical sleep, and prone, in its worst forms, to terminate in coma.*

MODIFIED FORMS.

I. Simple. This must be considered as the purely nervous variety, depending on mere erethism of the system, either of centric or peripheral origin, which runs a certain course, and has a tendency to subside of itself in a given time.

DEF. *It is marked by insomnia ; busy mental excitement and loquacity ; psychical hallucination or incoherent muttering ; illusions of sense ; timid suspicion of imagined conspirators ; tremor of the tongue or hands ; hepatic erethism or irritability of stomach ; impaired urinary function ; occasional headache and precordial anxiety ; tongue sometimes clean, at others loaded ; pulse frequent, irritable, sometimes natural ; a perspirable state of the skin, and pain of the limbs : the disease varying by the occasional absence of mental incoherence or tremor.*

The first tabular statement of forms will best illustrate this variety of the complaint ; which, as has been shown by Dr. Ware of Boston, has a natural tendency to terminate in a spontaneous and salutary sleep, at a period seldom less than sixty or more than seventy-two hours from the commencement of the paroxysm, which may extend, however, to six entire days. The generality of cases composing the first table, seldom ran a course beyond the beginning of the fourth day ; though, in some of them, the nervous erethism and increased vascular action of the cerebrum extended beyond this period. In one, the symptoms did not subside until the ninth day ; but in this instance, perhaps, the exalted nervous sensibility was accompanied by functional exhaustion of the nerves of the cerebral blood-vessels, followed by relaxation of the capillaries akin to inflammation. This is a point of practical importance, in observing the phenomena of the various forms of Delirium Tremens, which may vary from slight tremor with spectral illusions, depraved sense of hearing, or deranged common sensation, to aggravated forms of inflammation, muscular agitation, fever, and vital depression : all of which must be viewed by the discriminating practical physician, as transitions only from lesser to greater degrees of disease. In most cases of indisposition among drunkards, an attack of Delirium Tremens may be looked for as a probable event ; and cerebral erethism, which constitutes the lesser degree of this complaint, may supervene on peripheral irritation of the skin, stomach, intestines, or thoracic contents. Dr. Stokes, in illustrating sympathetic affections of this kind, cites a case from Andral, where the symptoms of gastritis were suspended on the super-vention of tetanus, which proved fatal ; and on dissection, the brain and spinal cord presented no morbid appearances, though the mucous surface of the stomach was intensely inflamed. In another case, which occurred at the Meath Hospital, the patient laboured under symptoms of cerebral inflammation, though there was no epigastric tenderness, vomiting, or symptom of gastritis ; yet, on dissection, extensive inflammation of the digestive tube was discovered, but none of the brain or its membranes. Where symptoms of erethism do not subside so quickly as usual in the simple forms, we must not too hastily ascribe them to the existence of inflammation. I have seen attacks of Delirium Tremens brought on in drunkards by the application of blisters. It is well known that wounds and other injuries bring on the *traumatic* form of the complaint, to which Dupuytren first called attention ; but this celebrated surgeon too hastily

inferred it to be in all cases a species of *encephalitis*. The disease frequently occurs in those subject to hepatic crethism, or copious biliary secretion, accompanied by irritability of stomach, and frequent vomiting; but, in such patients, its phenomena quickly disappear under the depurating effect which such increased secretion produces in the constitution. Similar critical evacuations, from the kidneys, skin, and intestines, during the convalescence and recovery from mania, were observed by Pinel, who says, that such patients were less liable than others to relapse. The tabular statement appended, shows that the disturbed state of sensation and intellectual action was sometimes considerable, in cases where there were no tremors; and again, tremors existed in some, where there was no sensory disturbance.

II. INFLAMMATORY. This is the next form of the disease with which we meet in the tropics. It is one marked by a greater degree of vascular determination to the brain and its connexions, or to some of the remote organs, either the stomach or lungs, which may act sympathetically on the nervous centres.

DEF. *Characterised by great restlessness and impatience of manner; maniacal violence, and busy psychical hallucination or muttering delirium; flushing of the countenance, heat of head, and contracted pupils; convulsive twitching of the muscles, heat or pain at the epigastrium; a frequent full, or hard pulse; generally, a dry, hot skin, but sometimes, a cool, perspirable, cutaneous surface; a dry, red, parched tongue; and much thirst.*

The transition from simple erethism, or disturbed sensation, accompanied by a slight degree of derangement in the capillary circulation of the brain, or peripheral organs, to a higher degree of nervous irritation and increased vascular action, constituting an inflammatory state of either the nervous centres or their peripheries, must be viewed as an important ground of distinction in the various phases of the same disease. That this distinction is one well marked, the various cases of Delirium Tremens, which compose the second tabular statement, will show; and it should not be lost sight of, either in the pathology or treatment of the complaint. It is important in all inflammatory affections of the brain, and of its subordinate nervous centres, to determine whether nervous or vascular derangement has the precedence; for on the predominance of one or the other, the treatment must be regulated. The primary assimilation of individuals attacked by Delirium Tremens, will be generally found defective previous to the occurrence of the attack; and as the processes of nutrition, both in the nervous and vascular systems, has been imperfectly performed, it is necessary to keep in mind, that inanition, and other predisposing causes of the disease, are debilitating ones, which give to the inflammation set up, a character of exhausted constitutional power, strongly disposed to pass into suspended functional action of the nervous centres, by terminating in coma, apoplexy, and cerebral effusion. If the attack has been preceded by long-continued habits of intoxication or great mental excitement, this state of innervation and exhausted power will be more apparent in particular symptoms, as the low, muttering character of the delirium; the anxiety of the respiration; the frequency, feebleness, and irritability of the pulse; the pallor of the countenance; the cold and clammy moisture

of the cutaneous surface, and the dryness of the tongue. Every increased action and excitement of the nervous centres involves, as would appear, a disintegration of their substance, and corresponding demand of reparation, without which, immediate suspension of their functional operations must follow. Attention to this law of the constitution will be found of great importance as ground for modified treatment of this disease.

III. *Pyrexial*. The third form of the complaint, which occurs more generally in the malarious seasons of the year, from July to October, is frequently met with, during the other months, in constitutions rendered irritable by long residence in warm climates, or in persons previously subject to intermittent and remittent fevers.

DEF. *It is accompanied by wakefulness, anxiety, and restlessness; following a stage of depression, chilliness, or shivering; succeeded by febrile heat of skin, or cold clammy perspiration; tremor, muttering delirium, and illusions of sense; frequent sighing; rapid, irritable pulse; furred tongue; scanty urinary secretion; complicated with inflammation and pyrexial paroxysms, and prone to terminate in collapse or epilepsy.*

Most of such cases might be viewed as forms of irregular remittent fever, which, accompanied by irritability of the sensorium and nerves, are apt to terminate in suspension of the nervous functions. Among recently arrived Europeans, during the hot weather in India, this form is met with as the product of elevated temperature and excessive spirit-drinking, and assumes many of the characters of an inflammatory remittent, in which accelerated vascular action has predominance over nervous erethism. In the *asthenic* modification of it, however, the vertigo, dilated pupil, oppressed and weak pulse, and other symptoms of depressed nervous energy, (which characterize cases of Delirium Tremens), with a well marked tendency to syncope and feeble action of the heart, point it out as a disease of innervation. Modifications of this variety, in debilitated constitutions, rendered irritable by long residence within the tropics, are also frequently met with during the cold months. In a practical point of view, it is useful to arrange such cases as modifications of Delirium Tremens; for though, with equal propriety, they might be classified as varieties of remittent fever, they should be separated in the mind of the physician, from more pure remittent fevers, caused chiefly by malarious influence.

IV. *Epileptic*. This is the fourth and last form of the disease.

DEF. *Insomnia; psychical hallucination, or illusions of sense; extreme tremor; and sometimes convulsive twitching of the muscles, passing into sudden loss of consciousness and sensation, accompanied by clonic spasms of the muscles, recurring in paroxysms, which terminate in recovery of consciousness and sensation, or in apoplectic annihilation of the cerebral functions.*

In the fourth tabular statement, seven of these cases are given, five of which proved fatal. The symptoms were analogous generally to the delirium, coma, and epileptic convulsions, induced by certain narcotic poisons, as belladonna and stramonium. Regarding the poisonous effects and symptoms of these last, I shall have, presently, occasion to speak.

The retention of these poisons in the system gives rise to a disturbed state of intellectual action and sensation, similar to what takes place in common epileptic attacks; and epileptiform symptoms of Delirium Tremens, are, as would appear, the combined result of the poisonous action of the alcoholic stimulant on the system, and the retention of important excretions, particularly the biliary and renal, which, when not eliminated by their own proper organs, cause the body to become a source of poison to itself.

PREDISPOSING AND EXCITING CAUSES.

Attacks of Delirium Tremens seem to depend, in many cases, on peculiarity of temperament, and individual constitutional excitability, either of hereditary or acquired origin. They happen most frequently among men of irritable dispositions, who are subject to precordial anxiety; or may be brought on by habitual indulgence in strong alcoholic drinks, and certain other narcotics, or stimulants. Whatever debilitating causes exhaust the energy of the nervous and circulating systems, and reduce the normal condition of the nutritive functions of the body, such as insufficient alimentation, inordinate mental exertion, and the immoderate use of various narcotic irritants, aided by the elevated temperature of tropical climates, are well marked predisposing causes of the disease. They render more effectual the influence which alcoholic drinks have in disturbing the intellectual, sensory, and motor functions of the brain and medulla oblongata. In such cases, immoderate spirit-drinking becomes an exciting cause of the disease; but in other cases, immoderate and continued habits of debauch become the predisposing causes of the phenomena which accompany the attack, but which are not developed in the system until some additional cause of exhaustion produces them. In this manner, losses of blood will often produce, in men of intemperate habits, all the phenomena of Delirium Tremens; and these are seen to follow, in many cases, hæmatemesis, or the bleeding from a wound.¹ Other predisposing causes, such as imperfect ventilation, malarious emanations, and the exhausting effects of fear and disease, seem to operate as predisposing causes; which, by enfeebling the vigour of the circulation, and impairing the energy of the nervous system, give efficacy to intemperance as an exciting cause of the disease. Sometimes, elevated temperature, or habitual exposure to the sun, act in this manner as predisposing causes, and give efficacy to immoderate drinking as the exciting one; but all these causes may be seen to occasionally change places with each other, while all of them agree in exerting the same morbid influence, by producing defective innervation, and consequently, unequal distribution of blood in the central or peripheral sensory organs.

Regarding the influence which elevated temperature has in producing the disease, Dr. Morehead, in some sensible observations appended to his *Pathological Anatomy of the Diseases of Bombay*, observes, that of

¹ Discontinuance of the immoderate and habitual use of ardent spirits, by producing a like state of exhaustion, becomes an immediate cause of the disease; the stimulus of alcohol being here the predisposing, and the cessation of its action the immediate cause of an attack.

twenty-nine cases where increased serous effusion and abnormal cerebral vascularity existed, within the cavity of the cranium, only three of these happened in the cooler months of the year, from November to March; and that the remaining twenty-six cases were distributed over the hot months, from the beginning of April to the end of October. In the tabular statement, given by him, of the percentage of admissions for Delirium Tremens, on the total of diseases in hospital for five years, the comparative frequency of the former, in the different months, is thus shown.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
3·2	5·3	2·1	4·4	4·7	3·1	2·3	1·9	3·3	1·2	2·3	3·5

Now the greater fatality of the disease, from April to October, may, in part, arise from the decrease of electricity in the air, during these months; Professor Faraday having lately expounded the decrease, obtained in degrees of M. Pelletier's electrometer. From these numerical results, Dr. Faraday finds that, in European climates at least, the quantity of electricity is at its maximum in the winter months, until it finds its minimum in June, and then again rises to its maximum in the succeeding January. The greater prevalence of Delirium Tremens in the cold months, as indicated by Dr. Morehead's table, would seem, however, to militate against the truth of any such inference; but the preponderance of the disease in hospital, at this time, may probably be explained by the fact, that the greater number of cases of Delirium Tremens admitted, are from among the seamen in the harbour, and that, in these particular months, there are more than the usual proportion of ships at Bombay. Dr. Blake, in his essay on the disease, decides somewhat hastily, that neither season nor climate has any material influence on its prevalence, while he quotes Rayer's opinion, that twice as many attacks of the complaint occurred in the month of May, as in any other month. Dr. Bang, on the other hand, found, that June and July were as fertile in its production as the month of May. Additional facts are yet wanting for the satisfactory solution of this interesting question, as to the influence which negatively electric states of the air have in rendering attacks of the disease more frequent or fatal in particular months; and an extension of Pelletier's investigation of this matter might be advantageously carried out in India.

Predisposing causes of the worst types of the complaint, the pyrexial and epileptic, will be found in some forms of organic disease of the brain or its membranes, of the heart or lungs, of the liver, and more particularly of the kidneys. Examples of these several causes are given in the two last tabular statements; which show, that organic renal disease is a much more frequent source of the worst symptoms of Delirium Tremens than is generally suspected; and lead to the inference, that when the elements of the bile and urine are not separated by their excreting organs in normal quantity, or when the brain, by the continued narcotism of alcoholic drinks, softens or is atrophied, the imperfect action of the liver and kidneys, being unable to free the blood from the excrementitious poisons accumulated in it, and not compensated by a suitable increase of the other excretory functions of the skin and lungs, tends to coma, asphyxia, and death.

DIFFERENTIAL DIAGNOSIS OF THE SYMPTOMS OF DELIRIUM TREMENS,
AND THOSE OF POISONING BY STRAMONIUM, AND OTHER NARCOTICS.

Supervening as Delirium Tremens frequently does on the puerperal state, or on febrile attacks in the intemperate, and productive as are other stimuli and narcotics of complaints attended by nervous depression, restlessness, obscurity and perversion of the senses, delirium, and deranged states of the circulation, it is important to mark attentively their peculiar symptoms; so that the physician may be enabled to distinguish between them and those of the complaint now under consideration. The limits of this paper, will not permit me to do more than briefly notice the character of the mental alienation, as compared with other kinds of mania. I must, therefore, chiefly confine this Differential Diagnosis to the symptoms of Delirium Tremens, which are liable to be confounded with those disorders caused by stramonium, and other narcotics.

Before proceeding to the latter, I may here notice the characteristic mental alienation of Delirium Tremens, confounded with other maniacal states, and not always altogether inseparable from them, particularly in the monomaniacal cases of irresistible propensity to habits of intoxication; which, under the influence of extreme tropical heat, and maniacal idiosyncrasy, are occasionally met with. In cases of this nature the patient is violent, maniacal, and unmanageable; ready to injure himself, and dangerous to others when unrestrained. Some of the inflammatory forms of the disease are of this kind; but in such predisposed maniacal constitutions, we must not hastily conclude that the delirium is attendant on encephalitis, as it may proceed from temporary erethism of the brain, caused by alcoholic stimulants. In the table of the simple form, the case of J. A., admitted 19th June, 1838, is a good illustration in point. The patient, though very violent and maniacal during the paroxysms, inflicting on himself several wounds, became quiet and rational on the second day, without the use of any decisive antiphlogistic measures. The symptoms which serve best to distinguish the simple erethismal type from the cerebral *inflammatory* one, may be found in the state of the *skin*; which is soft and covered with perspiration in Delirium Tremens, generally hot and dry in encephalitis; in the *pulse*, which is soft and compressible in the former, sharp, strong, and resisting in the latter; in the *pallor of the countenance* and frequent absence of headache in one, contrasted with the flushed face, contracted pupil, intolerance of light, and throbbing of the temples common to the other; in the *tongue*, which is moist, loaded, and not greatly altered from a natural state, in exalted sensibility of the brain, but is dry and furred in inflammation of this organ; in the *tremors*, which, though so common to one, as to give it a distinguishing name, are replaced in the other by convulsive twitching of the muscles; and above all in the *character of the delirium*, which consists in obscure perceptions and weakened volition, illusions, erroneous convictions, and a busy bustling train of false ideas, opposed to unmanageable maniacal violence, which cannot be recalled from its reverie to a temporary sense of consciousness, accompanied by persistent incoherent loquacity. The simple form of the complaint again presents many of the characters of *acute dementia*, from which it differs but little, I believe, in pathological condition. Each renewed

attack of the former malady seems to bring the symptoms nearer and nearer to those of the latter. In both diseases there is the same lost power of perception and attention, the brain being no longer susceptible of receiving and obtaining impressions transmitted to it, and consequently incapable of associating the relations or preserving the recollection of objects presented to it. The history of the manifestation of the symptoms, and an inquiry into the predisposing and exciting causes, will always enable us to form a probably correct diagnosis of the two diseases in cases of difficulty and doubt.

But it is now time to turn attention to the chief object of this section,—the difference between the symptoms of alcoholic poisoning and of that from other narcotic substances. The phenomena attending the cumulative morbid influence of alcoholic drinks, are in many instances similar to those of other narcotic poisons, which act more immediately and directly on the grey or vesicular and white or tubular matter of the brain. Alcoholic fluids absorbed into the blood may therefore be considered indirect poisons; the primary effect of which, in large doses, seems to be irritant and stimulant, followed by a secondary sedative action on the brain, which constitutes them narcotic poisons. The symptoms of their poisonous effect most closely resemble those which proceed from poisoning by various species of *datura*, indigenous to India: of which Dr. Herbert Giraud, professor of chemistry in the Grant Medical College at Bombay, has given the best and most intelligent description.

Dr. Giraud informs us that in 1848, fifty-one cases in which stramonium poisoning had been inferred on presumptive evidence of its characteristic symptoms, were treated in the Jamsetjee Jeejeebhoy Hospital at Bombay. The seeds of the species of *datura* supposed to have been used, were those of the "*datura alba*" and "*datura fastuosa*", both indigenous to India. The general character of the symptoms closely resembled those induced by *datura stramonium*, exhibiting, in several instances, the three distinct stages, 1. of primary delirium, 2. of sopor or coma, and 3. of secondary delirium, which have been observed to mark the action of henbane, belladonna, and other solanaceous plants. The patients were seldom brought to hospital before the second stage had commenced, and very frequently not until the third stage—that of secondary delirium—had supervened. In the majority of cases, either from the small quantity of the poison, from the large amount of food ingested with it, or from peculiarity of constitution, only a single stage of delirium was observed.

The following is Dr. Giraud's description of the general course of the cases in which the full effects of the poison were manifested:—"The patient, in the primary stage of delirium, is found in a state of extreme restlessness, usually attempting to wander about as if in search of something, but frequently, from giddiness and extreme muscular weakness, he is unable to walk or even to stand; he either vociferates loudly, or is garrulous and talks incoherently; sometimes he is mirthful, and laughs wildly, or is sad and moans, as if in great distress; most generally he is observed to be very timid, and, when most troublesome and unruly, can always be cowed by an angry word, frequently putting up his hands in a supplicating posture. When approached, he suddenly shrinks back, as if apprehensive of being struck, and frequently he

moves about as if to avoid spectra. But the most invariable accompaniment of this, and of the final stage of delirium, and frequently also of that of sopor, is the incessant picking at real and imaginary objects. At one time the patient seizes hold of parts of his clothes or bedding, pulls at his fingers and toes, takes up dirt or stones from the ground, or as often catches at imaginary objects in the air, on his body, or on anything near him; very frequently he appears as if amusing himself by drawing out imaginary threads from the ends of his fingers; and occasionally his antics are so varied and ridiculous, that I have seen his near relatives, although apprehensive of danger, unable to restrain their laughter. Many of these singular movements appear to originate in a curiously-impaired or disordered state of vision, in which distant objects seem to the patient as if very close to him, and those that are near as if highly magnified; for frequently, after gazing for some time at a distant object, he will attempt to grasp it, as if it were close at hand; and he starts back when approached, as if he thought the person approaching would, the next moment, touch him. This state of vision may, in part, depend upon the widely-dilated pupil, which, as in poisoning by other solanaceous plants, is an invariable symptom in all cases, and is persistent through each stage, and even continues for some time after complete recovery. With the foregoing symptoms, great diversity in the state of the circulation is met with in different individuals, and even in the same individual at different periods. In the greater number of cases, the temperature of the surface, and the strength of the pulse are natural: although the rate of the latter is usually somewhat accelerated, (90 or 100). In other instances, the pulse is much quicker than natural (112 or 120), full, firm, and even sharp; the temples throb, the respiration is hurried, and the surface of the body is hot: whilst, as a third and less frequent condition, the pulse is quick, small, and feeble; the respiration slow, and the surface cold.

"The second stage, that of sopor, is the state in which a great number of cases are first brought under notice. They are then found either in a state of profound sopor, or in one of excessive drowsiness, from which they may be partially and momentarily aroused to some degree of consciousness; there is low muttering delirium, tremors, subsultus tendinum, and, most usually, the characteristic catching at objects, although the patient's eyes may be closed at the time."

The diagnosis of the simple erethismal type of Delirium Tremens, from like cases of narcotic poisoning, will be found in the history and development of the two diseases from their respective exciting causes; in the persistent *insomnia* of the one, contrasted with the somnolency, or rather *somnambulism* of the other; in the *manner* of the patient, which is busy and active in the former, sluggish and inactive in the latter; in the *greater power of controlling the thoughts* for a moment, which those labouring under drunken cerebral erethism possess over those affected by the narcotism of stramonium; and in the *more busy character of the delirium* of the first, compared with the drowsy, low muttering, and catching at objects of the last. In the form of Delirium Tremens, caused directly by the abuse of intoxicating liquors, the more *sthenic* character of the nervous sensibility, and of the vascular excitement, is at once so strongly marked, as to prevent any possibility of mistaking the two affections.

POST-MORTEM APPEARANCES AND PATHOLOGY.

The *Morbid Appearances* of the brain and peripheral organs of the chest and abdomen, as they occurred in the fatal cases of the tabular statements here given, will be found briefly narrated in the column of results. Dr. Morehead, also, in his *Pathological Anatomy of the Diseases of Bombay*, published in the *Transactions of the Medical and Physical Society* of that Presidency, has recorded the necroscopic appearances of the body in several cases.¹ The chief *cerebral* lesion, in those not addicted to long-continued intoxication, consisted of moderate turgescence of the membranes, opalescent thickening of the arachnoid, an abnormal vascularity of the substance of the brain, and copious serous effusion into the sub-arachnoid areolar tissue, with occasional bullæ of air in this tissue, or in the vessels of the cerebral membranes. Dr. Todd, in his valuable *Treatise on the Anatomy of the Brain and Spinal Cord*, observes, that Cotunnus and Magendie deduce, from their experiments on this *cerebro-spinal* fluid, that two ounces of it may be regarded, in a state of health, as a minimum quantity; and that twelve ounces of it may sometimes be obtained from the *cranio-spinal* cavity, according as there is a greater degree of atrophy of the brain. In the necroscopic examination of fatal Delirium Tremens cases, as they occurred in India, I am not aware that any accurate estimate of the total quantity of this effused fluid has ever been made. The quantity generally effused in the cranial cavity, was, however, abnormally great, amounting often to four ounces. The effusion occupied the sub-arachnoid tissue in the depressions of the cerebral convolutions, so as to give them a smooth, uniform appearance. The cerebral convolutions, too, were abnormally shrunk and flattened, not by distension from within, but as if they were abnormally shrivelled from atrophy of the cerebral matter; a result, probably, of the increased vascular action which had been repeatedly set up in the brain by excess of spirit-drinking. Mr. Stovell, the present surgeon of the European General Hospital, at Bombay, records the case of John Powell, an apothecary, thirty-nine years of age, of very dissipated habits, who died of Delirium Tremens; and in whom, on necroscopic examination, the brain was found unusually small, weighing 2lbs. 10oz.² Future observations on this point, made in India, should be specially directed to ascertaining the usual average weight of the brains of those who die of this disease; some of the worst symptoms of which are certainly associated with atrophy of the cerebral matter. The serum has been found occasionally sanguineous; and generally, the arachnoid, which was thickened, was of an opaque, milky appearance. In the inflammatory, pyrexial, and epileptic forms, the appearances were frequently of a better marked inflammatory character; viz., vascularity and thickening of the dura mater and pia mater, bloody effusion on the former, adhesion of the arachnoid to the pia mater by a thick layer of lymph, and abundant serous effusion within the cerebral membranes, or into the substance of the brain. The appearances in the mucous mem-

¹ Transactions of the Medical and Physical Society of Bombay, No. ix, p. 120.

² The average weight of the encephalon, estimated from Professor J. Reid's careful observations, made at the Royal Infirmary, Edinburgh, is 3lb. 2oz. 3½dr. in the male; and 2lb. 12oz. 8½dr. in the female.

brane of the *stomach* and *small intestines*, were generally of a chronic inflammatory character. The *liver* was sometimes enormously enlarged, and compressed the right lung. The *kidneys* were often converted into a uniform fleshy mass, or in a state of fatty degeneration of the cortical substance, encroaching much on the tubular portion. The *lungs*, in a few cases, were emphysematous, and gorged with blood, as in asphyxia. The *bubbles of air* in the vessels of the pia mater, or in the sub-arachnoid tissue, as observed by Dr. Morehead, were found in two of the cases, five hours after death, and appeared to be evolved from the animal fluids during life. Future observation should be directed to ascertain the chemical nature of the gas evolved, as it may result from the usual metamorphosis of the inspired oxygen and expired gases, in the peripheral system of the kidneys and liver, being arrested by this disease.

Pathology. An immoderate use of alcoholic drinks causes primarily excitement of both the nervous and circulating systems, followed, generally, by secondary depression of the functions of the brain; but when this nervous depression does not supervene, and the increased action of the circulating vessels continues, this may gradually subside without consecutive depression, as in some of the simple forms of Delirium Tremens; or it may terminate in cerebral inflammation and fever, such as characterize the inflammatory and pyrexial varieties of the disease. The derangement of the capillary circulation of the brain or its dependent nervous centres, and of the peripheral organs, is accompanied by exaltation of the sensorial function; so that these nervous centres and peripheries react on each other in producing various degrees of erethism and increased vascular action, observable in various states of the disease. Whether the nervous erethism be of centric or peripheral origin, it is accompanied by a mild or violent delirium, according as the deranged vascular action is of an *asthenic* or *sthenic* kind; and may be accompanied by excitement of the senso-motory function and muscular irritability; terminating in nervous exhaustion and depressed action of the heart, with coma and apoplectic death, or suspended function of the pulmonary capillaries, or asphyxia. The sthenic or asthenic symptoms, which become the objects of treatment, predominate according as the general nutrition of the system has been well or ill performed; or as the nervous centres are in a state of healthy energy or defective innervation, and according to their degrees of normal capacity and nutrition. In the young and robust, whose blood is rich in fibrin, and whose nerves are well nourished and exalted in tone, increased vascular action generally takes precedence of the nervous erethism; but in the old, and in those worn down by the effects of climate and their own intemperate habits, exhausted nervous power, and asthenic vascular action, will be leading features in the complaint.

The indirect narcotic action of alcoholic drinks is exerted on the central organs of the nervous system, the brain and spinal marrow, and is analogous in effect to that of more direct narcotics. This is shown by the loss of sensibility and volition, the convulsions, coma, and death, which follow previous excitement. The suspension of the respiratory movements, or the asphyxia, seems to be sometimes primary, sometimes secondary; but both the coma and asphyxia, in the worst cases of Delirium Tremens, are generally contingent on anterior conditions of the

system, and the suspension of its usual eliminating processes. The exhausted nervous power, and asthenic vascular action, which characterize particular attacks of the complaint, are found essentially connected with such conditions, which must not be neglected in the treatment; and are of more importance as the foundation of therapeutic indications, than the one too exclusively and absolutely acted on in many cases, that of interfering with the regular course of the erethismal paroxysm, by administering large doses of opium, chloroform, and other sedatives, instead of depurating the poisoned blood, and removing diseased secretions by means of purgatives and diuretics. Under the head of epileptic forms of the disease, seven such cases are recorded; of which, five proved fatal. A necroscopic examination of four of these revealed, that one of them was fatal by *coma*, two by *asphyxia*, and one by *syncope*. The comatose case was associated with cerebral disease and organic heart-affection of long standing; the latter organ being affected with fatty degeneration of the right side, and softening of the left. The two asphyxiated cases were connected with organic disease of the kidney or liver; and the case of death by syncope presented enlargement and softening of the heart, with ossification of the semilunar valves of the aorta.

TREATMENT.

I have thus endeavoured to bring into review all the varied aspects which Delirium Tremens presents under different anterior conditions of the system, arising out of diseased changes of the organism, or from the nature of the predisposing causes to which this may have been exposed. It will be obvious, from the exposition given, that the indications of judicious treatment must be founded on a correct diagnosis of particular cases, and on a sound knowledge of the existing pathological conditions associated with the morbid phenomena. Such can be alone obtained from a strict pathological analysis of the symptoms, combined with a knowledge of the previous habits of the patient. It should not be too hastily inferred, that the sole and leading indication of the treatment must be to induce sleep by heroic doses of opium; for this, when given too largely in order to cut short the exalted sensibility of the brain, without reference to the conditions of other remote organs, particularly the liver and kidneys, is fraught with much danger to the patient, by causing convulsions, coma, and death. Dr. Ware's two admirable memoirs on the *Natural History and Treatment of Delirium Tremens*, are most important contributions to a philosophical knowledge of the disease; and the conclusions arrived at, are essential elements in our comprehension of its true pathology and treatment. These conclusions are fully supported by the progress and termination of the forty-one cases reported in the first tabular statement. The paroxysm of the disease commences with certain obscure signs of depression, followed by excitement and delirium, which run a certain course, and terminate in sleep. This may be considered as much sequent of the stage of excitement, as is the secondary delirium to the stage of coma in cases of poisoning by stramonium. As a favourable termination of the symptoms generally follows a sound sleep, it has been concluded, somewhat erroneously, that sleep, induced by whatever means, is the cause of the salutary change which takes place, and by which the patient is relieved from excitement and restored

to reason. A profuse warm sweat may be observed to accompany this critical sleep; but when no such crisis is observable, and sleep has been procured at all hazards by means of large doses of opium, the patient passes into a state of apoplectic coma, from which he may never awake. The excitement of the system does not altogether depend on the loss of sleep; and we must not proceed too vigorously in endeavouring artificially to induce it by means of opium or chloroform, till the impaired secretory and excretory functions of the body have been restored to healthy exertion.

The indications of treatment to be generally acted on are: 1. To allay the exalted sensibility of the central nervous organs or their peripheries, by reducing vascular derangement and inflammation, by means of mild antiphlogistic remedies, and by the removal of all irritating diseased secretions of organs that react on the brain. 2. To restore the organs of assimilation to a healthy condition, so as to supply fresh nutrient materials to the blood; and to prevent nervous exhaustion by a moderate allowance of stimuli, combined with such materials. 3. To eliminate poisoned products from the blood, by restoring the proper excretory functions of the liver and kidneys.

In fulfilling the first indication, it will be prudent to seclude the patient in a quiet and partially darkened apartment, and let him be watched by some well instructed nurse or attendant, who is capable of quieting his impatience, and can manage him without physical restraint. I have known many cases, in which the mental emotion and nervous exhaustion, caused by coercion, were followed by the utmost danger to the patient, by bringing on an epileptic seizure. In particular instances, where the vascular action preponderates over the nervous erethism, the cautious use of general or local bleeding is admissible; but it must be remembered, that, though in such instances of inflammatory or pyrexial complication, blood-letting may be had recourse to, it must be used sparingly, as having a natural tendency to aggravate the nervous erethism, and those symptoms of exhaustion with which the disease is so usually associated. In most cases, therefore, the local application of ice or cold douche to the head is a preferable and safer means of subduing the cerebral sensibility and increased vascular action, which are so characteristic of this peculiar disease. The cold douche may be repeated three or four times in the day; and frequent general cold affusion, where the temperature of the skin is not below the natural standard, the pulse is of moderate strength, and there are no local complications, is had recourse to in India with the best effect. In many cases, even where there were indications of a feeble circulation, but much cerebral excitement, I have seen the cold douche to the head used with most beneficial effects, while the rest of the patient's body was immersed in a warm bath. The water used in India, where the mean temperature is high, was never artificially cooled; but when used in European climates, particularly in winter, it may be prudent, occasionally, to take off the extreme chill of the water before using it. In further fulfilment of this indication, the administration of tartar emetic solution, in the proportion of half a grain of the tartrate of antimony, with a drachm of the tincture of opium, and an equal quantity of nitrous ether, may be had recourse to with the greatest advantage in allay-

ing the excitement of the brain, and in inducing a healthy secretory action of the skin and kidneys. When the biliary secretion is morbidly increased, emetics will be of the greatest use in relieving the stomach from the irritation of unhealthy bile; and should purgatives be thought more applicable, calomel in large doses, or combined with antimonials and opium, followed by castor oil, may be advantageously employed. Sometimes the exhibition of stimulating enemata after the calomel and opium may be preferred to purgatives, which, when used too freely, are apt to produce an increase of excitement.

The fulfilment of the second indication is to be accomplished by administering moderate quantities of thin sago or arrow-root, combined with wine or brandy, according to circumstances. From five or eight ounces of port wine in the course of twenty-four hours, with occasionally a quarter of a pint of brandy or gin, adapted to the greater or less nervous exhaustion of the patient, will be generally found sufficient to fulfil all that is here required in particular cases. Should the appetite, as is often the case, admit of more solid ingesta being used, mutton chop, grilled chicken, etc., may be given to the patient.

The third and last indication, that of removing poisoned elements from the blood, is partly effected by the latter part of the first indication of removing irritating secretions from organs that react on the brain. The special object in view, however, should be steadily promoted, by freely administering calomel, aided in its action by diuretics, in order to restore the impaired excretory functions of the liver and kidneys, and thus eliminate urea from the blood. In cases of peripheral erethism, arising from the retention of biliary matters, calomel will be found an invaluable remedy; and Mr. Corfe's late experience of its good effects, in cases of this kind, and of deranged gastro-hepatic function, establishes the fact, that it will succeed in subduing general erethism after all other remedies have failed. The whole of my experience in India can bear testimony to its good effects, and would justify Mr. Corfe's well-grounded reliance on this as a special remedy. More might be added as to the relative value of particular remedies; but enough has been already said practically to guide the judgment of all who may be called on to treat the disease.

TABULAR STATEMENT OF THE FORMS, CHARACTERISTICS, AND TREATMENT OF DELIRIUM TREMENS.
No. I. SIMPLE FORM.

Date	Name	Age	No. of attack	Gen. Symptoms of Attack	Erethism (Charac. of)	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend.	Result
Feb. 24, 1835	W. J.	37	First	Severe pain in stomach after drinking; pain at base of skull; tremor of limbs	Peripheral and spinal	Fear of being murdered	Sensitivity exalted (intermittent)	Tongue clean, great thirst, bowels loose, stools watery	General cold affusion, occasional purg. opii 3ij in mist. camph. every 4 hours, increased on 5th day (being violent) to 3ss every 3 hours, with good effect	—	Cured.
Feb. 15, 1836	H. C.	39	Not known	Excitement, tremor, restlessness, insomnia, pain in joints	Cerebral	Rapid incoherent muttering	Hyperaesthesia of cerebr. & its connect. with spi. cord, mot. power of lingual n. ex. Convulsive twitching of muscles. Natural, pulse 74	Natural.	General cold affusion, laudanum 3iss, morning and evening; sleep and coherency returned on fourth day	4th day	Cured.
May 31, 1836	D. B.	25	Not known	Vomiting, pain in stom., conv. starting of mus., frightful dreams	Cerebral	Psychical hallucination in dreams; supposed himself in prison	Cerebral Convulsive twitching of muscles. Natural, pulse 74	Tongue clean, stools nearly natural, pulse 74	Cold affusion, laudanum	—	Cured.
June 5, 1836	J. B.	35	Not known	Diarrhea, epigastric pain and vomiting, broken slumbers, frightful dreams	Peripheral	Reverie, during sleep, dreams	Cerebral sens. exalted, motor funct. not affected	Tongue loaded, stools watery and yellow	General cold affusions, cal. and op. at bed-time, purgatives	—	Cured.
June 8, 1836	W. M. C.	36	First	Excitement, flushed countenance, eyes red and bloodshot	Cerebral	Spectral illusions; dreams	Motor function little disturbed, tongue tremulous	T. furred, yellow, thirst, p. 78, full, soft; sk. soft, very perspirable, appetite much impaired	General cold affusion, opium, occasional purgatives	4th day	Cured.

June 21, 1836	W. M. 29	First	Pain at vertex, tremor of tongue, wakefulness, pain in cardiac region	Cerebral	None	Motor funct. slightly affect.	P. 110, resp. nearly norm., t. load., yell.; bow. slightly derang.	Tart. emet. sol., purg. anod., doses of tinct. of op. and hyoscy. at bed time	4th day	Cured.
Aug. 23, 1836	Ditto	Second	Tremor, wakefulness, mental excitability, delirium 2d day of admission, languor Anorex., watchfulness, trem. of t. & limb., no del., slight headache	Cerebral	Not noted	Motor funct. more affected than before.	Bowels constipated	Cal. and op., with purg.; afterwards, tart. emet., laud., cold affus., brandy & water. Del. became intermittent.	6th day	Cured.
Oct. 11, 1836	Ditto	Third	Peri-anal fulness, trem. of t. & limb., no del., slight headache	Peripheral	None	Motor funct. slightly affected.	Pulse 90, weak; bowels constipated	Tart. emet., cold affusion, occasional purgatives, and anod. of op. and hyoscy.	6th day	Cured.
Aug. 22, 1836	E. S. 26	First	Spasmod. pain of stomach, vomiting & purging, restless. Delirious 3d day, after appl. of a blister	Peripheral	Incoherent loquacity, spectral illusions	Motor funct. little disturbed.	Pulse 88, full, compressible; sk. op., blister to epigast., soft, perspirable; After delirium, general slight coat; ral cold affusion, laud., bowels at first danum, and occasional purgatives	Warm bath, cal. & op., blister to epigast.; After delirium, general cold affusion, laud., ral cold affusion, laud., danum, and occasional purgatives	4th day	Cured.
Dec. 4, 1836	G. P. 30	First	Excitement, insomnia, contracted pupils, bloodshot eyes, tremor	Cerebral	Suspicious dread of conspiracy against him	Motor function little disturbed.	Resp. normal, sk. soft, moist; p. 100, rising as emet. sol. every third hour, small quantities of gin and water, cold douche to head	Emet. anod., warm bath; afterwards tart. emet. sol. every third hour, small quantities of gin and water, cold douche to head	4th day	Cured.
Mar. 11, 1837	Mr. W. 33	First	Tremor, wakefulness, agitated manner, a wild suspiet. express. of countenance	Cerebral	Quite coherent, but troubled by imaginary voices	Not much disturbed.	Resp. normal, skin soft, bowels confined, tongue loaded	Purgatives, drachm. doses of tinct. op. every hour till sleep was induced, cold douche to the head	5th day	Cured.
Feb. 10, 1837	M. S. 34	Second	Lost power of perception and attention, insomnia, numbness of limbs, and trem. after drinking	Def. cerebral sensibility	Incoherent imbecility	Slight tremor	Pulse small & feeble, respirat. and skin natural, tongue loaded and red at the edges	Opium, with calomel and purgatives; warm bath	2nd day	Cured.

No. I. SIMPLE FORM (*continued*).

Date	Name Age	No. of Attack	Gen. Symptoms of Attack	Erethism (Charac.) of	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend.	Result
Feb. 6, 1838	T. K. 40	First	Insomnia, loquacity, busy agitated manner, tremor, accomp. by cynanche tonsillaris after drinking	Cerebral	Spectral illusions; strange imagination that he had been burned to death on board ship	Tongue and hands very tremulous	Appetite good, bowels open, and tongue clean	Tartar emet. sol. with tinct. hyoscyam. every four hours, an opiate at bed-time, and one dose of castor oil	3rd day	Cured
Feb. 19, 1838	J. C. 45	Not known	Insomnia, restlessness, tremor and biliary purging after drinking; pain at nape of neck	Peripheral	Spectral illusions, suspicious dread of conspirators	Tongue tremulous, loaded	P. small, wiry; frequent sighing; copious cold perspiration, and increased biliary secretion, appetite good	Cal. and op. with purg., tart. emet. sol. with tinct. hyoscyam. Cold douche to head	2nd day	Cured
Mar. 19, 1838	N. A. 38	Not known	Headache, tinnitus aurium, restlessness, red suffusion of eyes, suspicious look of dementia	Cerebral	Spectral illusions, suspicion of conspirators	Exalted sensibility, intermittent, slight tremor	Pulse and skin normal, tongue thickly loaded	Cal. & purgatives, tart. emet. sol. with anodynes	3rd day	Cured
Mar. 28, 1838	J. T. 49	Not known	Insomnia and tremor, nausea and irritability of stomach	Peripheral	Timid suspicion	Motor functions not much affected	Pulse, skin and respiration normal, tongue clean, appetite good	Cal. and op., tart. emet. sol. and anod. Cold douche to head	3rd day	Cured
June 10, 1838	A. B. 36	First.	Insomnia, restlessness, spectral illus., trem. after drink.; nausea, irritab. of stom., pain of epigast.	Peripheral	Dreaming and spectral illusions	Convulsive twitching of muscles	Pulse and skin of natural, tongue loaded	Emetic, purgatives, leeches to epigast., tart. emet. sol., with anod. and cold douche to the head	3rd day	Cured

June 19, 1838	J. A. 30	First	Insomnia, maniacal violence, incessant loquacity after drinking	Cerebral	Violent delirium, during fits of which, he wounded himself in several places	None.	Pulse full but soft, skin covered with perspiration	Tart. emet. sol., with anodynes every second hour; purgatives	2nd day	Cured
Feb. 10, 1837	M. S. 34	Second	Insomnia, lost power of perception and attention, numbness of limbs, tremor after drinking	Defective cerebral sensibility	Incoherent imbecility	Slight tremor	Pulse small & feeble, resp. and skin nat., tongue loaded in centre and red at margin	Cal. op. and purgatives; warm bath	2nd day	Cured
April 19, 1838	Ditto	Third	Childish imbecility, insomnia, and tremor after drinking	Ditto	Ditto	Ditto.	Ditto	Tart. emet. sol., with anod., diuretics and purgatives	6th day	Cured
April 24, 1838	J. H. 37	First	Insomnia, restlessness, perverted perception & slight nocturnal fever after drinking	Cerebral	Spectral illusion	None.	Resp. and skin normal, nausea, irritability of daily; cold douche to stomach, bowels the head loose	Tart. emet. sol., with anodynes, thrice daily; cold douche to the head	4th day	Cured
May 8, 1838	Ditto	Second	Insomnia, flushed countenance, throbbing in the head, frightful dreams, convulsive twitchings of muscles after drinking	Cerebral	Ditto	Convulsive twitchings	Skin bathed in perspiration, tongue foul, grip-tart. emet. sol. every 4 hours; cold douche to the head	An emetic, purgatives and anodynes, every 4 hours; cold douche to the head	9th day	Cured
Feb. 19, 1838	J. C. 45	Not known	Excitement, insomnia, restlessness, tremor, biliary purg. after drinking, pain at nape of neck	Peripheral	Spectral illusion, suspension of conspiracy	Tongue tremulous	P. small & wiry, frequent sighing, appetite good, sol. with hyoscyam.; copious biliary secretion, tongue head loaded	Cal. and op. with purgatives, tart. emet. sol. with hyoscyam.; cold douche to the head	2nd day	Cured

No. I. SIMPLE FORM (continued).

Date	Name	Age	No. of Attack	Gen. Symptoms of Attack	Erethism (Charac. of)	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend.	Result
Mar. 19, 1888	N. A.	32	Not known	Head- a., tinnit. aurium, susp. imbecile look, insomnia, rest., suffus. of eyes	Cerebral	Spectral il- lusion, and dread of a con- spiracy	Slight tre- mor, sensibi- lity alternate- ly depressed and exalted	Pulse and skin natural, tongue thickly loaded	Calomel and pur- gatives, tart. emet. sol. with anodynes	3rd day	Cured
Mar. 28, 1888	J. T.	49	Not known	Nausea, irrita- bility of stomach, insomnia, trem.	Peripheral	Mingled dread and suspicion	Motor func- tion little af- fected	P., sk., resp. nat., tong. clean, appetite good	Cal. and op., tart. emet. sol. and anod. cold douche to head;	3rd day	Cured
May 26, 1888	J. C.	31	First	Insomnia, ex- cit., slight head- ache, muscular starting, loqua- city after drink.	Cerebral	None	Tremor and subsultus ten- dinum	Pulse and skin natural, tongue loaded, bowels confined	Tart. emet. sol. with anod. every 3 hours, purgatives, with croton oil; cold douche to the head	6th day	Cured
July 15, 1888	Ditto		Second	Insomnia, ex- citement, nau- sea, dilatation of pupils aft. drink.	Cerebral	None	None	Skin moist, tongue loaded, yell., bow. conf., urine scanty	An emetic, cal., James's, powder and op., purgatives and warm bath	3rd day	Cured
June 4, 1888	J. S.	38	Second	Headache, in- somnia, restles- ness, and tremor after drinking	Peripheral	Frightful dreams and spectral illusions	Convulsive twitching of muscles	Pulse rapid, skin moist, nau- sea at stomach, tongue loaded	An emetic, with purg., tart. emet. sol. with anodynes; cold douche to the head	5th day	Cured
Nov. 2, 1888	H. H.	32	Not known	Insomnia, ex- cit., flushed coun- tenance, dilated pupils aft. drink.	Cerebral	Hallucination that he had been accused of murder	No tremor	P. freqt. and var., skin persp., tongue dark red, b. conf., ap. good	Cal. and purg. tart. emet. sol., with tinct. douche to the head	3rd day	Cured
Dec. 13, 1888	J. J.	38	First	Nausea, excit., flushed count., headache, in- somnia, heat of skin after drink.	Cerebral	None, but manner sus- picious	Slight tremor	Pulse soft, skin cool, bwls. open, tongue furred	Leeches to temples, cal. with tart. emet. and op. purg., cold douche to head, and anod.	3rd day	Cured

Dec. 18, 1838	R. M. 38	First	Insomnia, rest- less, loquacity and tremor after drink. Had inter- fever in July	Cerebral	Hallucination that he was pinioned	Tremor slight	Pulse 80, soft, skin cool, bowels confined, tongue clean	Cal. tart. emet. & op. purg., antimon. mix. with anod. every 3 hours, tepid douche to head, weak br. & w.	4th day	Cured
Dec. 18, 1838	J. J. 36	Not known	Insomnia, irri- tability of stom. and purg., ten- derness of colon, and tremor after drinking	Peripheral	Muttering to himself, and catching at objects	Tremor	Pulse 60, soft, skin cool and moist, and co- vered with a thin yellow crust	100 leeches to abdom., cal. & op., carb. ammo. -gr. x, with camph. mix. & brandy 4 times daily, mod. allowance of port wine & enem.	3rd day	Cured
Feb. 8, 1840	A. C. 38	Not known	Nervous de- press. aft. drink., succeeded by insomnia, rest- lessness, and un- manage. violence of manner, with illuss., after drink	Cerebral	Reverie and illusions	Restless agi- tated manner	Pulse variable, skin soft, bowels slow	Tartar emetic solut., with anodins., a small allowance of brandy, cold douche to the head, a purgative and enemata	3rd day	Cured
April 5, 1840	W. E. 29	Not known	Nervous de- press. aft. drink., followed by exci- tability and illu- sions	Cerebral	Reverie and illusions	No tremor	Pulse variable, skin warm and perspirable, tongue loaded	Cal. & op., cast. oil, tart. emet. sol., with anod., cold douche to head, small allow. of brandy diluted	3rd day	Cured
April 8, 1840	J. T. 26	Not known	Nerv. depres- sion. after drink., and cessa. from hab. op.-eating, succ. by irrit. of stom., insom., restless., and illusions	Cerebral	Illusions of the usual cha- racter, red suf- fusion of the sclerotic coat of the eye	No tremor	Pulse feeble, skin cold and damp, tongue foul	A blister to the epi- gast., efferves. drts. with an oz. of brandy & a drm. of tinct. op. every 3 hours, cal. & op. with cast. oil, cold douche to the head	4th day	Cured
April 14, 1840	J. K. 24	Not known	Insomnia, rest- less., and delir. after drinking	Cerebral	Busy delirium	Much tremor	Pulse feeble, skin covered with clammy perspiration	Purg., tart. em. sol., with tinct. op. & diur., br. & water in mod. quant., cold douche to head, & sul. quin. sol.	9th day	Cured

No. I. SIMPLE FORM (continued).

Date	Name	Age	No. of Attack	Gen. Symptoms of Attack	Erethism (Charac. of)	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend.	Result
April 22, 1840	C. F.	31	Second	Insomnia, restlessness, and delirium after drinking	Cerebral	Busy delirium	Much tremor	Pulse feeble, skin cover. with clammy perspiration	Purg., tar. em. sol., with tinc. op. & diur., brandy & w. in mod. quant., c. douche to head, sulph. quin. sol. Leeches & blist. to epigast., cal. and op. irritable, bowels with purg., effervesc. loose, tongue draughts with tinct. op. and diuretic, cold douche to the head	9th day	Cured
May 14, 1840	T. R.	42	Not known	Incoherent loquacity, tremor, insomnia, and epigastric tenderness after drinking	Peripheral	Incoherent loquacity	Much tremor	Pulses small and feeble, stomach irritable, bowels with loose, tongue coated yellow.	Cal. camph. & op., nape of neck, leeches to epigast., w. bath & c. douché to head, tar. eme. sol., with tinc. op. diuretic, sul. quin. sol. Cal., James's pow., op. & purg., w. bath	6th day	Cured
May 31, 1840	W. C.	33	Not known	Insomnia, excited agitated manner, tremor, illusions after drinking, epigas. pain, red suffus. of the eyes	Cerebral and peripheral	Illusions of the usual character	Much tremor	Pulse soft and frequent, skin moist and cool, tongue white, anorexia	Cal. camph. & op., nape of neck, leeches to epigast., w. bath & c. douché to head, tar. eme. sol., with tinc. op. diuretic, sul. quin. sol. Cal., James's pow., op. & purg., w. bath	4th day	Cured
July 20, 1840	T. E.	29	Not known	Insom., impatient, tagtat. manner, illus., trem., epi. pain, dilated pupils aft. drink. Incohe. mutt., fidgetty employ. of hands, as if drawing threads from ends of fing. trem., inso., abd. tend. aft. drink.	Cerebral	Illusions of the usual character	Tremor not great	Pulses small and feeble, skin covered with perspiration, bowels confined	Cal., James's pow., op. & purg., w. bath	4th day	Cured
Aug. 6, 1840	C. M.	47	Not known		Cerebral and peripheral	Illusions and mental incoherence of an intermittent character	Tremor	Pulse of variable frequency and strength, nape of neck, calom., skin moist, bow. hydrochlor. of mor. loose, and vom. phia, with purgatives, iting of dark cold douche to the bilious matter head, port wine	Leeches to epigast. tinct. op., brandy & w. Leeches to epigast.	—	—

NO. II. INFLAMMATORY FORM.

Date	Name	Age	No. of Attack	Gen. Symptoms of Attack	Erethism (Charac. of)	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend.	Result
Dec. 14, 1828	T. F.	44	First	Hepatic tenderness, wakefulness, delirium, tremor	Peripheral, ending in encephalitis tremulenta	Thought he had seen the V. Mary, loquacious, restless, impatient	Tightness of head, transient tremor	Tongue dry and parched, slight diarrhoea, biliary secretion, dark green	Leeches and blister to side, cal. as purg., bleeding for injury of head, cold lot. to head, camph. and op., mer., leeches and blister to head for hepat. tend., and tightness in head		Cured
April 18, 1836	E. D.	33	Not known	Wound of elbow joint, violence, incoherence, screams	Cerebral, traumatic delirium	Maniacal violence, muttering	Tremor, convulsive twitching of muscles, contraction of pupils	Tongue dark red, much thirst, urin. sec. affec., p. 100, of mod. strength; perspiration; copious, clammy; resp. diff. on 18th day when mind was collected, cough, purulent expectoration, scrofulous constitution	General cold affusion, leeches to temples, blister between scap., tinct. muriat. morph., purgatives		Died 18th May. Tubercles in lungs.
Aug. 12, 1836	W. K.			Diarrhoea, shivering tremor, fluttering feeble pulse. On fourth day, delir., pain in right breast on inspiration, uneas. in spine	Cerebral and spinal	Incoherent loquacity, fancied his bed was being pulled from under him	Intermittent exalt. sens., motor funct. not much affected, pupils contracted	Pul. 120 after delir., frequent sighing, occas. admission; after dry skin, respir. lirim, cupping to oppressed on ad-spine and epigast., immission, bowels tart. emet., tepid aff. conf., epigast. fusion and laudanum tender, urine in at bed-time mod. quantity	Warm bath, cal. op. and ipecac. at admission; after delirium, cupping to spine and epigast., emet., tepid aff. fusion and laudanum	2nd day	Cured

No. II. INFLAMMATORY FORM (continued).

Date	Name Age	No. of Attack	Gen. Symptoms of Attack	Erethism (Charac. of)	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend.	Result
Feb. 2, 1838	S. B. 44	Not known	Insomnia, impatient violence and tremor after nausea, hiccup, vomiting & feeling of nervous depression	Peripheral and cerebral	No delirium, but restless impatience	Tongue tremulous	Pulse full and strong, skin covered with moisture, bowels constipated, inspiration painful.	An emet. at admis. with purgat. of castor and croton oil, cold douche to head, leeches to left chest, tart. emet. sol. and tinct. morph. Collapse on third night, death soon after		Died. Effusion of blood on dura mater, venous congestion of cerebral membr., serous effusion into subst. of brain, pulm. apoplexy, left lung, lymph effused between pleuræ on both sides
Oct. 13, 1836	W. M. C. 36	Second	Acute epigast. pain & tend. increased by deep inspiration, occasional cough and viscid mucous expector. dulness at fifth rib in right pect. region, absence of respiratory murmur, slight dilatation of ribs, puerile inspiration in left lung, wakefulness, then delirium, collapsed features	Peripheral	Muttering delirium	Motor functions little disturbed	Pulse 120, soft, respiration quick, rium, cold douche to and painful, skin head, tartar emetic, soft, perspirable; tongue coated, yellow; abdomen distended with flatulence, bow. loose, stools dark green, bilious	Leeches to epigastrium, cold douche to head, tartar emetic, calomel and opiates		Died on 4th day. Pleur. pulmon. vascular over mid. lobe of right lung, which was hepatized; fibrinous coag. in all cavities of heart, muc. coat of stomach, uniformly diffused redness, liver veridically enlarged, 9lb. 12oz.

Oct. 23, 1838	G. O. 20	First	Insom., severe front. headache, dilatation of pu- pils and intoler- ance of light, epigastric pain, and numbness of limbs after drinking	Cerebral and peripheral	Incoherent wandering of thoughts	No tremor	Skin alternate- ly cool, moist, and dry, warm ; pulse 104, sharp, tongue furred, and red at edges, urine scanty and hot, slight cough, painful inspirat. Pulses small and feeble, skin cool, tongue furred to its constitu. effect, and red at the edges, anorexia	Leeches & blist. to epigast., 1 gen. bleed. ; to 20 oz., w. bath & c. douche to head, blist. to nape of neck, merc. to consti. effect, tart. comb. with sul., quin. and aloes, diuretics	11th day	Cured
May 28, 1840	P. C. 25	Not known	Insomnia, in- coherent loqua- city, vertigo, pain at the vertex of head, abdominal tenderness after drinking, pupils dilated	Cerebral and peripheral	Incoherent loquacity, with hallucination of being on board ship	No tremor		Leeches to epigast. and right side, merc. to its constitu. effect, warm bath and cold douche to head, camph. mixture with tinct. op. and diuret., sago and wine	7th day	Cured

No. III. PYREXIAL FORMS.

Dec. 26, 1823	A. D. 34	First	Inflam. of foot, delir. on 29th, insomnia, anxie- ty, restlessness	Peripheral	Thought him- self about ord. duties, mutt., del. hurry, anx	Tremor of hands slight	Pulse full, skin hot, bowels conf. motions dark yellow	Venesect. to 3xvi, leeches to head, cam- phor and opium	—	Cured
Nov. 19, 1836	J. C. —	Not known	Insomnia, flush- ed counten., agi- tated manner, & trem. aft. drink.	Cerebral	Intermittent reverie, fear of conspirators	Musc. of arms tremulous	Respiration natural, bowels constipated	Tar. eme. sol. twice daily, with cold affu., anod. at bed-t., purg., latterly sul. quin. sol.	7th day	Cured
July 31, 1837	J. P. 33	First	Vertigo, lan- guor, nau., vom., cold skin, violent del., flush. coun., trem., freq. firm p. 3d day aft. ad. Prev. in hosp. for remit. fev. accom- with tremor	Cerebral	Spectral illu- sions, violent delirium, dread of con- spirators	Motor func- tions not much affected	Pulse rapid, feeble, respirat. natural, skin at first cold, after- wards warm and bathed in persp., ton. thickly fur, urgent thirst, defect. appetite	Purgat. at admis- sion, blister to nape of neck, cold douche to pillars of calom., emetic. and op. after delirium	5th day	Cured

No. III. PYREXIAL FORM (*continued*).

Date	Name	Age	No. of Attack	Gen. Symptoms of Attack	Erethism (Charac. of)	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend.	Result
Jan. 9, 1888	S. H.	41	First	Insomnia, flushed countenance, excitement, and tremor	Cerebral	Thought distressed and anxious, accompanied by muttering, continued dread of conspirators	Motor funct. not much affected	Pulse frequent, wiry, skin moist, respirat. normal, bowels confined	An emet. at adm., tart. emet. sol. and anod.; after inc. symp. on 3rd day, cal. tart. emet. and op., cold douche to head, and allow. of bitter beer	4th day	Cured
April 6, 1888	T. W.	39	Not known	Insomnia, restlessness, & trem. after drinking; much frontal headache and pain at base of occiput	Cerebral	Spectral illusions, dread of conspiracy, frightful dreams	Starting of muscles	Cough with febrile parox., tongue furred, bowels confined, urin. sec. scanty	Cold douche to head and warm bath, purg. and colchi. with other diuretics and anod., repeated leeching and cupping at base of occiput	35th day	Cured
July 13, 1888	A. O.	47	Not known	Headache, insomnia, spectral illusion & tremor, with febrile paroxysm	Cerebral	Muttering, delir., spectral illusions, kicking at bed-clothes	Subsultus tendinum	Pulse variable, from 96 to 120, skin alternately hot and perspir., tongue clean, tremulous, urin. scanty	Campher mixture, antim. wine, diuretics, cold douche to head, leeches to nape of neck, blister to nape of neck. Died comatose after 3 drachms tinct. opii, given to produce sleep		Death 3rd day. Venous congest. of pia mater, much serous effusion between it and tunica arachnoidea and into the ventricles, vascular redness of mucous coat of stomach, and intestinal canal, substance of kidney converted into uniform fleshy mass.

Aug. 12, 1838	A. W. 38	First	Pain in temples and base of occiput, extending down the neck, insomnia, flushed countenance, indistinct pyrex. parox., of a rheumatic diathesis and in-temperate	Cerebro-spinal	Muttering, delirium	Mot. funct. not noted	Pulse frequent, feeble, skin cold and covered with mixture, with antim. perspirat., ton. wine and colchicum, slightly furred other diuretics, lat- and red at edgesterly cal., with aloes and small doses of sulphat. quinine	Blister to head and nape of neck, camph. of brain, milky opacity of arachnoid, thickening of pia mater, which, at the optic thalami, chiasma of optic nerves, crura-cerebri, pons Varolii, & med. oblon., was adhe. by a thick lay. of lym.; serous effu. into theca vertebr., cont. flakes of lym. Bright's dis. of kid.	Death 3rd day. Vasc. red. of cereb. membr. and subst. of brain, milky opacity of arachnoid, thickening of pia mater, which, at the optic thalami, chiasma of optic nerves, crura-cerebri, pons Varolii, & med. oblon., was adhe. by a thick lay. of lym.; serous effu. into theca vertebr., cont. flakes of lym. Bright's dis. of kid.
Mar. 14, 1839	F. H. 29	Not known	Insomnia, restlessness, illusions and tremor, with irritability of the stomach after drinking	Cerebral and peripheral	Illusions and mental incoherence of an intermittent character	Tremors	P. variable in freq. & stren., sk. abdomen, cal. and op. gen. moist, some- with purgat., w. bath times dry, bow. & c. douche to head, conf., attend. by tart. emet. sol., tinct. abd. tend. & anor. op., sulph. quin. mixt., tongue coated	Leeches & blist. to abdomen, cal. and op. with purgat., w. bath times dry, bow. & c. douche to head, conf., attend. by tart. emet. sol., tinct. abd. tend. & anor. op., sulph. quin. mixt., tongue coated	16th day

NO. IV. EPILEPTIC FORM.

April 4, 1838	J. B. E. 46	Not known	Insom., restles., flushed counte., bloodshot eyes, dilat. pupils, pain at base of occip., irritable of stom. aft. drink. Two epilep. fits day of admiss., another the 3rd day	Cerebral and spinal	Impatient but manageable delirium, muttering and kicking at the bedclothes	Vertigo and convulsive twitching of muscles	Skin warm and dry, resp. not much affected, neck, cold douche to tongue loaded, bowels constip.	Leeches to temples, resp. not blister to nape of thickening of pia mater, much affected, neck, cold douche to opacity of tunica arach. and tartar emetic, opium of brain, old adhes. of left and purgat. Death lung, fatty degen. of r. side on tenth day by an of heart & soften. of l., fibr. epileptic fit	Death. Red vascul. and thickening of pia mater, much serous effu. into sub. of brain, old adhes. of left lung, fatty degen. of r. side of heart & soften. of l., fibr. of aorta, enlar. of liv. & red vasc. of muc. mem. of stom.
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No. IV. EPILEPTIC FORM (continued).

Date	Name	Age	No. of Attack	Gen. Symptoms of Attack	Erethism (Charac. of)	Mental Alienation	Sensory and Motor Func.	Organic Functions	Treatment	Date of Amend	Result
June 28, 1838	W. K.	38	Fourth	Insomnia, restlessness, and mental hallucination for several days before admission, caused by hard drinking, for which he had taken an emetic, and been bled and leeches	Cerebral	Mental hallucination of the usual character	Not noted	Not noted	Tartar emetic sol. with tinct. hyoscyam. every second hour. Became very restless and incoherent on second night after admission, and died suddenly in a fit		Died 2nd night. Vasc. redness of, cerebral membra., much serous effus. into the ventricles & at base of brain; heart enlarged and softened., semi-lunar valves of aorta ossified; posterior portion of lungs gorged with blood; muc. coat of stom. pale and softened. Cured
April 28, 1839	W. M.D.	35	Fourth	Restlessness, flushing of countenance, blood-shot eyes and tremor after drinking. Pain at nape of neck	Cerebral	None	Tongue and limbs tremulous	Tongue loaded, thirst great, stools dark bilious	Cal., James's powder and purgatives at admission, leeches to nape of neck	3rd day	
May 12, 1840	J. N.	36	Not known	Insomnia, pallor of countenance, and extreme tremor, after drinking	Cerebral	Illusions of usual character	Excessive tremor of tongue and limbs, convuls. fits of epilep. char., after one of which he became quite rational	Pulse frequent, feeble, skin cold and moist, tongue loaded	Cal. and opium followed by castor oil at adm., small quant. of tinct. hyoscy., brandy punch, cold douche to head and sinapisms to feet. Died in an epileptic fit on 2nd day		Death. Permission to examine the body not obtained

May 18, 1840	C. W. 38	Not known	Severe frontal headache, accompanied by heat and dryness of skin, uneasiness in loins, and much tremor after drinking	Cerebral	None	Extreme tremor	Pulse small and feeble, skin dry, tongue coated white, bowels confined, urine scanty, hot	Cal. with ipec. and hydrochlor. morph., castor oil, warm bath, effervesc. draughts, with diur., cupping and leeching of temples, blister to nape of neck, cold douche to head. Death by epileptic fit on second day	Death. Fatty lesion of cortical subst. of both kidneys, extend. into tubular portion between the calices; liver much enlarged, muc. coat of stom. of grey leaden col., lungs emphysem. and congested as in asphyxia, mod. congest. of cerebral vess., serous effus. between arachnoid and pia mater.
June 5, 1840	W. A. 37	Not known	Epigastric pain and vomiting, followed by insomnia, pallor of counten., dilated pupils, illusions, general excitement, and tremor. after drinking	Cerebral and peripheral	Illusions of usual character	Much tremor of hands, and occas. cramp	Pulse feeble, skin covered with perspiratn.	Blister to epigast., cal., ipecac. and hydrochlor. morph., castor oil, small quant. of brandy and water, with tinct. opii, local abstraction of blood from nape of neck by cupping, cold douche to head and hot foot-bath. Died on third day	Death by epilep. Arboresc. vascularity of cereb. mem. more than normal proportion. of bloody points on incised sub. of brain, which was softened, much serous effusion into ventricles, liver much enlarged, lungs distended as in asphyxia.
April 7, 1840	J. D. 36	Not known	Insomnia, excitement, trem., illusions & much irritability of stomach after drinking	Cerebral	Illusions of usual charac., temp. insens. of pupils of eye, following convulsions, count. flushed	Extreme tremor, mor., and im- paired muscu- lar power of the right side	Pulse feeble, skin moist, tongue clean, bowels open	Emet. of sulph. zinc, blisters to epigast. & nape of neck, efferves. drats. with br. & nit. ether, afterw. antim. mix., with tinct. op. & cold douche to head	Cured

CLINICAL ILLUSTRATIONS OF DISEASES OF THE NERVOUS SYSTEM; AND OF OTHER AFFECTIONS SIMULATING THEM DURING LIFE.

By ROBERT HUNTER SEMPLE, M.D.

[Read before the Westminster Medical Society, March 16, 1850.]

NOTWITHSTANDING the rapid advances which medical science has made of late years, the subject of CEREBRAL DISEASES lies still wrapped in considerable doubt and uncertainty. The pathology of such affections is often ill-defined, the diagnosis obscure, and the treatment very unsatisfactory. It is therefore with great diffidence that I offer my humble contribution to this department of practical medicine; and I am compelled to admit, *in limine*, that the cases and the remarks which I am about to offer will, in some instances, rather increase than diminish the difficulty of investigations connected with the Diseases of the Brain. But I believe, that a full confession of ignorance is one step towards the acquisition of knowledge; and that a careful consideration of *facts*, although it may increase our scepticism as to the opinions and theories developed in some books, will not make us less efficient practitioners of the healing art. I believe that medicine, as a science, is far from being complete; and that, like geology, it consists, at present, of a vast multitude of *facts*, collected by the labours of faithful observers, which are now being grouped together and arranged, and may some day be reduced to a definite system.

With these observations, I proceed to the immediate purpose of this paper; and I may mention, as an apology for entering upon so difficult a subject, that I have had considerable opportunities, during many years' connexion with a large public practice, of investigating the Diseases of the Brain and Nervous System, during life and after death; and the difficulty of the subject has, in my mind, invested it with particular interest. The remarks which I am now about to offer, are altogether practical, and I shall relate only such cases as have come under my own notice.

The *Diagnosis* of cerebral disease is exceedingly difficult, and no very definite rules can at present be laid down for the guidance of the practitioner. The most formidable symptoms are sometimes unaccompanied with any perceptible organic lesion; while at other times, the most serious and extensive alterations of the cerebral structure have given rise to no symptoms whatever during life. These remarks will be illustrated by the two following cases:—

CASE I. EXTENSIVE DISEASE OF THE BRAIN, WITHOUT ANY SYMPTOMS DURING LIFE. F. C., æt. 61, a pauper in the Islington Infirmary, had always enjoyed good health, and never applied for medical relief, except upon one occasion, for a slight ulcer on one of his legs, which was speedily healed. On Monday, March 21, 1842, he was in his usual state of health, when, after taking his tea, he complained of general pain and uneasiness; and, before any assistance could be rendered, he expired. A post-mortem examination was made four days after death, when the following appearances were observed:—*Head*. There was considerable congestion of the scalp; the dura mater was in some parts

adherent to the inner surface of the skull, and congested. On the surface of the left hemisphere, beneath the dura mater, and above the arachnoid membrane, there was found an adventitious membrane, perfectly organized, of a tough consistence, similar to the buffy coat of blood, thick in the central portions, and gradually becoming thinner at the sides and ends. In the thickest part, the thickness was about three lines: the whole membrane was seven inches long, and two and a half broad, and completely concealed the left hemisphere of the brain, which was flattened and compressed where it lay beneath it. On the upper surface, this adventitious membrane exhibited a dark red appearance, the under surface was more pale. On closer examination, it was found to consist of two layers, enclosing a cavity of considerable size between them. Both the upper and under surfaces were perfectly smooth and polished, and corresponded to the two layers of the arachnoid membrane. The arachnoid membrane beneath this adventitious formation, and also on the other side of the brain, was thickened and opalescent; and a considerable quantity of thin, serous fluid, was found lying beneath it, as well as in the ventricles. The minute vessels of the brain were congested, but the substance of the organ itself was of healthy structure and consistence.—*Chest.* The left lung exhibited some old adhesions, and the cavity of the right pleura contained a considerable quantity of thin, serous fluid; the bronchial tubes were congested. The heart was rather above the natural size; and the parietes of the left ventricle were thickened; there was also a slight thickening of the aortic valves, but the aorta itself was quite healthy; as were also the other valves. The viscera of the abdomen were all generally healthy.

REMARKS. Whatever may have been the cause of this man's sudden death, it is evident that a large adventitious growth must have existed for some years upon his brain, without producing any symptoms during life. It appears to me that the above case was, originally, one of true arachnitis, attended by the effusion of coagulable lymph, which eventually became organized, then separated from the membrane by which it was first secreted, and formed the adventitious growth above described; but Mr. Solly, who describes a somewhat similar case, considers the appearance to be due to a coagulum of blood, the colouring matter of which has been absorbed.

CASE II. ACUTE MENINGITIS WITHOUT ANY SYMPTOMS OF CEREBRAL DISEASE DURING LIFE. Sarah C., æt. 20, was attacked with peritonitis on the 8th of March, 1842, and was discharged cured, on the 20th of the same month. She was again attacked with illness on the 26th of April, when I was called to see her. She was then lying in bed, complaining of great pain in the abdomen, which, however, was not aggravated, but relieved, on pressure; pulse feeble; tongue slightly furred. She was ordered to take five grains of calomel and fifteen of jalap, and a draught every four hours, consisting of half a grain of emetic tartar with Epsom salts and infusion of senna. She was much relieved by taking these medicines, and seemed to be rapidly recovering. On the 29th of April, she again applied for medical relief. She was now sitting up, and complained only of pain in the abdomen, not increased, but relieved, upon pressure. As I felt pretty certain that the pain was not owing to a

fresh attack of peritonitis, I treated it as if it were neuralgic, and ordered a draught to be taken every four hours, consisting of ten minims of tincture of opium, with half a drachm of Epsom salts and an ounce of infusion of senna. On the 30th, she was worse; pain in the abdomen still very severe, but relieved upon pressure; bowels confined, much vomiting, some thirst, pulse feeble. She was now ordered to take four grains of calomel in sugar, every four hours. At half past six the same evening, she was much worse; she screams out in consequence of the severity of the pain, which, however, is still relieved upon pressure; pulse 120, not full or strong; has vomited all the powders and the mixture, and cannot retain even toast and water on the stomach; tongue white and furred. To take immediately, a pill, consisting of five drops of croton oil with five grains of rhubarb. This pill was rejected in a quarter of an hour. At half past nine the same evening, is worse; has constant vomiting, but no alvine evacuations, and still complains of excruciating pain. Under the impression that the symptoms were owing to some obstinate intestinal obstruction, she was ordered to have a clyster administered, consisting of gruel and salt; she was also ordered to take a minim and a half of hydrocyanic acid (Scheele's strength) immediately, and, if rejected, to be repeated until the vomiting should be allayed. A blister was also applied to the epigastrium, and a powder was given, consisting of ten grains of calomel and one of opium. The blister caused a little vesication; the clyster brought away no feculent matter; the hydrocyanic acid draughts were nearly all thrown up: and the powder of calomel and opium was likewise rejected. She continued in great pain during the whole night, but retained her intellect throughout; and when asked if she felt any pain in her head, she replied that she did not. She died at eight o'clock the next morning, only two days from the fatal seizure. A post-mortem examination was made twenty-three hours after death, when the following appearances were observed:—

Head. The scalp, skull, and dura mater, presented no morbid appearances. The vessels of the arachnoid membrane and of the pia mater were very minutely injected, presenting a highly inflammatory appearance. The former membrane was thickened and opalescent, and a quantity of serous fluid was poured out upon making an incision. There was about an ounce and a half of thin serum in the cavity of the skull and theca vertebralis. The ventricles contained rather more than the natural quantity of thin, serous fluid. The brain itself was of natural colour and consistence, except that, on cutting into the white matter, a great number of small bloody points were discernible.

Chest. There were no remarkable appearances in the cavity of the chest, with the exception of some congestion of the bronchial tubes, connected with an attack of bronchitis, for which I had attended her about a month before her death. The heart was perfectly healthy throughout.

Abdomen. The liver was quite healthy; there were some adhesions between this organ and the parietes of the abdomen, resulting, of course, from the attack of peritonitis above mentioned. The stomach contained only some gruel and toast and water; its mucous membrane was generally quite pale, with the exception of a few patches of congestion. The intestinal canal was healthy throughout, and contained only a moderate

quantity of gas, and some feculent matter in no great abundance, and of the natural appearance. No ulceration, constriction, or dilatation, could be discovered anywhere, after the most minute and careful examination. The peritoneal surface of all the viscera was generally healthy, with the exception of a few slight adhesions, the results of the attack of peritonitis from which she had entirely recovered. The pancreas, spleen, and kidneys were healthy. The uterus was small and healthy; the right ovary was very much dilated, being as large as a hen's egg, and when opened, it was found to contain about an ounce and a half of pus, which was enclosed in a sac lined by a smooth membrane. There was no effusion whatever into the peritoneal cavity.

REMARKS. It is very difficult to explain the cause of the symptoms and the rapid death of the patient; and I can come to no other conclusion upon this very curious and anomalous case, than that this young woman's death was caused by an attack of meningitis, the peculiar symptoms of which were wholly absent during life. In the heart and lungs, there was no morbid appearance sufficient to account for the fatal result; nor was there detected in the abdominal cavity any indication of disease, which could explain, satisfactorily, the horrible pain which she experienced in the abdomen, to which region she referred the whole of her malady. The suppuration of the right ovary, which was probably contemporary with the previous attack of peritonitis, was the only important morbid appearance in the abdominal cavity; and, as this abscess did not in any way communicate with the surrounding parts, it cannot, I think, be considered as the cause of death. The greatest pain was felt at the epigastrium, and pressure over the whole of the abdomen was attended with relief, not with aggravation of the symptoms; and I therefore refer it to nervous sympathy with the diseased membranes of the brain.¹

After relating the above cases, in the first of which there were no symptoms at all during life, and in the second the symptoms were referred to a totally different region, I need hardly refer to others where the most excruciating pain has been felt in the head, and where, nevertheless, upon the death of the patient, no cerebral disease whatever has been manifested. In the following case, it will be perceived that the most marked symptoms of cerebral disease existed during life, and yet no structural disease of the brain was discovered.

CASE III. DISEASE OF THE KIDNEY WITH ALBUMINOUS URINE, SIMULATING CEREBRAL DISEASE. Elizabeth W., æt. 70, an inmate of the Islington Infirmary, was first seen by me on the 6th of January, 1848. I found her labouring under symptoms which appeared to indicate a cerebral affection. She was occasionally violent, uttering loud noises, and complaining of great pain in the head; pupils fixed, somewhat dilated; tongue brown, dry, and cracked; great thirst; pulse about 104, very weak and irregular. The limbs were in a state of spasmodic rigidity, resisting every effort to change their position. I recommended her head to be shaved, and a blister to be applied to the nape of the

¹ I confess that I have still some doubts as to the real nature of this case; but whatever may be its true pathology, I can vouch for the strict accuracy of all the facts. R. H. S.

neck, and one to each temple. On the 8th of January, she was rather better, and more quiet; the rigidity of the right arm had disappeared, and the left was now rigid, with the fingers extended and separated. Her urine was passed under her, and none could therefore be collected for examination. On observing this woman, on several successive days, it was found that the rigidity of the limbs was not constant, but varied on different days, sometimes existing on one side, sometimes on another. She remained in a hopeless state, with a fluttering, irregular pulse, and dry cracked tongue; the intellect was wandering, but she sometimes put out her tongue when asked to do so, and sometimes she answered questions. She lingered till January 15, when she died.

Post-mortem examination. *Head.* The scalp and skull were healthy; the dura mater was rather congested; the arachnoid membrane presented no morbid appearance; the surface of the brain was healthy. The brain itself was found to be healthy throughout, and of firm consistence. *Chest.* The heart and lungs presented no peculiar appearance, except that the former was somewhat thickened, and the mitral valves were slightly diseased. *Abdomen.* The liver was of natural size, and of nutmeg appearance. The kidneys were small, and their proper coat easily separated, exhibiting a pale, mottled appearance beneath; the substance of each kidney was firm, but granular and pale. Some urine was taken from the bladder and examined. I should here observe, that there was no opportunity afforded for examining this fluid during life, as it dribbled away from her without any apparent consciousness on the part of the patient. The urine was turbid; and on the addition of nitric acid, a copious deposit was produced, which was increased by heating the mixture. Corrosive sublimate also threw down a copious white precipitate. A small portion of the urine was examined by the microscope, and it exhibited the tubular casts which are frequent in albuminous urine accompanying renal disease.

REMARKS. This case, therefore, which during life exactly resembled one of structural disease of the brain, was really one of poisoning of the blood by urea. There can be no doubt that the *simple apoplexy*, as it is called, is the result of albuminuria; the albumen of the blood in that disease being excreted by the kidneys, and the urea of the urine remaining in the blood, and acting as a poison to the nervous centres. This case is remarkable for the spasmodic rigidity exhibited by the muscles, a symptom which is often described as characteristic of cerebral softening; whereas in death from albuminuria, the patient is generally in an immoveable or comatose condition.

CASE IV. EPILEPSY ATTENDED BY HYPERTROPHY OF THE CRANIAL BONES. Margaret Y., æt. 46, formerly a servant, was obliged to leave her place, many years ago, in consequence of frequent attacks of Epilepsy. She was for many years a patient in the Islington Infirmary, and under constant medical treatment for the above disease: the fits were frequent, occurring at irregular intervals, and of a very violent character. In the intermissions between the fits, her health was tolerably good, with the exception of occasional headache; her intellectual faculties were quite unimpaired. As she always derived benefit from blood-letting, her disease was considered to be of a congestive character, and a strict anti-phlogistic regimen was adopted and maintained. She was on several

occasions cupped between the shoulders; blisters were applied, and kept open in the same situation, and purgatives were administered. Her diet was of the lightest character; no solid food or beer was allowed, and she derived her support entirely from milk, eggs, bread, and thin broth, or beef-tea. This treatment continued for several years with some advantage, but no decided improvement. In May 1842, the fits became more frequent and severe, typhoid symptoms supervened, and she died.

Post-mortem examination. The body was plump and well-formed, and there was a layer of fat beneath the skin, about three quarters of an inch in thickness over the abdomen; a rather remarkable fact, considering the tenuity of her diet. *Head.* The scalp was natural. The skull externally presented no peculiar appearance, and no difficulty was experienced in sawing it through. On removing and examining it, however, it was found that there existed a remarkable want of uniformity between the two surfaces of the skull in some parts, owing to thickening of the osseous structure, particularly of the internal table, which, instead of being thin and brittle, was thick and solid. Along the line of the circular incision made by the saw, the skull was of about the average thickness. The os frontis was then sawn through, immediately in front of the coronal suture. Along the line of incision made in the usual process of removing the calvarium, the thickness of the cranium was one line and a half; but the part corresponding to the right frontal eminence was half an inch thick; and the same part, on the left side, was five lines in thickness. All the prominent bony processes were much increased in thickness and asperity, as the crista galli, the posterior clinoid processes, the bony ridge of the petrous portion of the temporal bone, the ridges on the internal surface of the occipital, etc. The dura mater was congested; the vessels of the arachnoid membrane were also congested, and the membrane itself opaque and thickened; beneath the arachnoid there were two or three drachms of bloody serum. The brain was flattened in front, the flattening exactly corresponding to the thickening of the internal table of the skull. The substance of this organ was very firm in its consistence, and the grey part was of an unusually dark colour; in other respects it presented no remarkable peculiarities. The other organs were carefully examined, but no morbid appearances of importance were discovered.

CASE V. HYDATIDS LYING BENEATH THE ARACHNOID MEMBRANE. Elizabeth B., æt. 46, an inmate of the Islington workhouse, of diminutive stature, of bloated, leucophlegmatic appearance, and of rather torpid intellect, who, although long a resident in the workhouse, had not suffered from any remarkable ailment, was brought to the surgery on Monday, Dec. 28, 1846, in consequence of serious illness. At that date, her face was swollen, the lips were livid, and the whole body was anasarcaous. She complained of cough and difficulty of breathing, and general uneasiness. On examining her chest, I found no morbid sound over the region of the heart; but sibilant râles were heard over the region of the lungs. She was ordered some medicine, and to be removed to the infirmary. The next day, she was much worse, the bloated anasarcaous appearance still remained, and, in addition, she seemed to be sinking into a state of coma, her breathing being sterto-

rous, her pulse very feeble, and her extremities cold. An attempt was made to administer some medicine, but she was unable to swallow. Mustard poultices were ordered to the feet. The pulse, however, became wholly imperceptible, the breathing quiet, the pupils in a fixed state between contraction and dilatation, and she died Thursday, Dec. 31.

Post-mortem examination. The body, generally, was œdematous; the subcutaneous areolar tissue being infiltrated with serum.—*Head.* The scalp and skull presented no morbid appearance, but the surface of the dura mater exhibited considerable congestion. The arachnoid membrane was generally healthy and transparent, and only a small quantity of fluid was effused between its layers. On examining the surface of the brain beneath the arachnoid membrane, I observed some semi-transparent masses in one or two places: I at first considered them to be local effusions of serum, but on examining them more closely, I found that they could readily be detached from the surrounding tissues, and were, in fact, hydatids, each consisting of a flask-shaped mass, having a thick skin and gelatinous interior. I now instituted a diligent search for these hydatids in all parts of the brain. Many of them were found on the exterior, lying between the sulci, and overlapped and hidden by the convolutions, all being beneath the arachnoid membrane. One hydatid was found lying free and unattached in the left ventricle; this was much softer than the others, and resembled a small oval mass of jelly of a yellow colour; another, much smaller and rather hard, was found lying upon the optic nerve, on the right side, at the part where the nerve winds round the crus cerebri. Altogether, about eighteen of these hydatids were collected, varying in size from that of a bean to that of a small pea; there were also a number of others scattered about in various parts of the brain, but so small, that they could not be extracted entire. They did not exist so abundantly in the white as in the cineritious substance, and they were wholly wanting in the cerebellum. No hydatids were found in any other part of the body. *Chest.* The heart was quite healthy. The lungs were also healthy, except that the mucous membrane of the bronchial tubes was thickened and reddened, and contained a considerable quantity of frothy mucus. *Abdomen.* The viscera of the abdomen were all healthy. As the bloated anasarcaous appearance of this woman gave rise to some suspicion of renal disease, the kidneys were carefully examined, but were found perfectly healthy.

Some of the hydatids were sent to my friend Dr. Sharpey, who recognised them as examples of the *cysticercus cellulosæ*; and the specimens are now preserved in the museum of University College, London.

REMARKS. The presence of hydatids in the brain is, no doubt, a very rare occurrence; and although the fact of their existence in that organ has been mentioned by some writers, yet it would appear that they have often been confounded with common cysts, and that, in particular, a beaded or vesicular appearance of the choroid plexus has sometimes been mistaken for a cluster of hydatids. I have, however, seen a coloured plate, by Dr. Carswell, in the museum of University College, which represents a number of subarachnoid hydatids, similar to those which I have above described. Dr. Copland, in his excellent *Dictionary*, article "Brain," mentions the fact of the existence of hydatids on the surface of the brain, but does not quote any case from his own experience.

Dr. Abercrombie, in his work upon the *Diseases of the Brain and Spinal Cord*, alludes to the existence of hydatids on the brain, but gives no case from his own investigations; and he moreover appears to include the vesicular appearance of the choroid plexus among hydatid growths, or at least he considers that this appearance has been mistaken for hydatids by those who have described such formations. Mr. Solly, the most recent writer upon the brain, alludes also to the existence of hydatids in that organ, but gives no case from his own practice. Cruveilhier states that he has met with hydatids beneath the arachnoid membrane, but gives only one illustration, which appears, however, more like a large cyst, than a true example of a cysticercus.

CASE VI. CONGESTIVE DISEASE, AFFECTING THE FIFTH PAIR OF NERVES ON THE RIGHT SIDE. Elizabeth B., ætat. 54, a healthy-looking woman, has generally enjoyed good health, with the exception of suffering occasionally from indigestion, and once from an attack of pneumonia, two years ago. About six weeks from the date of the present report (early in October 1841), she first experienced slight dimness of sight in the right eye, which, however, on examination, did not present any peculiar appearance. At that time she also complained of a pricking, shooting pain in the same eye, together with pains in her forehead, face, and right ear. Since that time the pain has become gradually worse, and her health has been much impaired.

On a careful examination, on the 13th October, the following were the features of her case. She complains of a shooting, throbbing, burning pain in the right eye, and a sensation, as she expresses it, as if the eye-ball were too large for its socket. The same kind of pain extends to the forehead as far as the vertex, backwards to the ear and occiput, and down the neck; to the right side of the nose, as far as the external aperture of the right nostril, and to the upper maxillary bone; the pain originating at the situation of the infra-orbital foramen. The upper eyelid is completely drawn over the ball of the right eye, so as entirely to obstruct vision. She has no power to lift it up; and the attempt to draw up the lid causes excruciating pain and violent action of the orbicularis palpebrarum. When the lid is elevated, although this is done with great difficulty, she is able to see very distinctly; there is no peculiar appearance presented by the eye itself, except that the pupillary aperture is oval instead of round.

She states that, since her illness, her hearing on the right side has been impaired: the power of smelling and of taste are, however, quite perfect. The pain in the parts above described is not constant, but subject to remissions and violent exacerbations, and is much increased by pressure on the regions affected. She complains of derangement of her general health; she has a sour taste in her mouth; no thirst, nor any desire for food; she has vomited several times this morning; bowels moderately open; urine scanty and high-coloured; tongue covered with a thick white fur; pulse 84, regular.

From a review of these circumstances, I came to the conclusion, that this woman was suffering from a neuralgic affection of the fifth pair of nerves, the ophthalmic division of that pair being chiefly concerned. The pain of the surface of the eye was evidently neuralgic, the spasmodic

closure of the lid was produced by reflex action ; the oval shape of the pupil was due to sympathetic irritation of the lenticular ganglion. At that time, I considered the case to be a combination of neuralgia and dyspepsia, and perhaps hysteria ; but its progress convinced me that the disease was more deeply seated, and affected the origin, not the extremities, of the nerves. Acting under the impression that the disease was neuralgic or dyspeptic, I directed a blister to be applied to the right temple, and she was ordered to take, every four hours, a draught composed of ten grains of carbonate of magnesia and one drachm of sulphate of magnesia, in peppermint water.

Oct. 15. Feels rather better ; and, on the whole, the pain is somewhat diminished. She can lift the upper eyelid to the extent of about a quarter of an inch, but with pain and great effort. The eyelid is very tender to the touch. The general health is much improved ; tongue much cleaner, but still slightly furred ; vomiting has ceased ; bowels open ; no sour taste in the mouth ; pulse 84, regular.

Oct. 16. Feels much worse ; has had no sleep the whole of last night, in consequence of excessive pain in the parts above described. As I now believed that the symptoms were owing to inflammatory action or congestion at the origin, or in the course of the ophthalmic division of the fifth pair of nerves, I ordered the following : five grains of pilula hydrargyri to be taken twice a day, and a draught to be taken every four hours, consisting of two-thirds of a grain of tartar emetic, half a drachm of sulphate of magnesia, and an ounce of infusion of senna.

7 P. M., *same day.* She has taken two doses of the medicine ; the first produced no marked effect ; the second excited copious vomiting, followed by a violent convulsive fit, attended with foaming at the mouth. On my visiting her soon after this attack, she was lying in a state of torpor, and could not answer the questions put to her. I could now lift up the right eyelid without apparently exciting any pain, but the eyeball was drawn in different directions by the convulsive action of the recti and obliqui muscles. The pupil contracted and dilated, but its margin was irregular, assuming a somewhat triangular appearance ; pulse 100, strong and incompressible. She was now bled to sixteen ounces. While the blood was being drawn, she was seized with violent attacks of rigidity of all the muscles, which ceased after lasting a few minutes. She appeared now to be only partially sensible, groaned occasionally, and drew her breath heavily and laboriously.

11 P. M. Breathing now hardly perceptible, except at intervals, when she takes two or three deep inspirations. There is constant rigidity of both lower extremities ; the upper extremities are also rigidly fixed, although they are now and then relaxed for a short time. The lower jaw is firmly closed, and any attempt to draw it down is opposed by the violent contraction of its muscles. The muscles of the face are not rigid, and both the lips and eyelids can be freely drawn in any direction. The pupil of the right eye varies very much in figure, but is never round. There is not much spasm of the muscles of the back or abdomen, although both appear slightly rigid when pressed upon ; pulse 80, soft and compressible.

Oct. 17. The rigidity of the muscles has continued with intermissions throughout the night, during a part of which she was delirious. Blood

not buffed nor cupped; pulse 80, soft. Since seven o'clock this morning, she has been sensible, and answers questions quite rationally. She has now perfect power over all the voluntary muscles, except that she is unable to raise the right eyelid. The pain caused by the attempt to draw it up with the finger is more intense than formerly; tongue dry, and covered with fur; no thirst; skin dry; bowels not relieved since six o'clock last night, when she had a copious fœtid evacuation; has passed no urine for twenty-four hours; breathing natural. The following course was now adopted: a solution of the extract of belladonna (gr. v to ʒi of water) was dropped into the eye, poured upon the blistered surface on the right temple, and applied to the whole of the right eyelid, and adjacent parts, by means of a linen rag. The following was also ordered: calomel gr. ij, blue pill gr. iij; a pill to be taken every four hours. In three minutes after the application of the solution of belladonna, as above described, the pain in the eyeball ceased, and she expressed it as being benumbed.

Oct. 18. Feels rather better. The fits of spasmodic rigidity occurred last night nearly every ten minutes, but they ceased at 1 A.M.; and after that time she had some tranquil sleep. She is now quite sensible, and has passed about a pint of urine, which has deposited a copious white sediment. The pain in the eyeball is less; she says it is benumbed, but exposure to light gives considerable pain; there is pain in the left lumbar region; bowels confined; pulse 76, rather hard. To have half an ounce of castor oil immediately, and to continue the pills of calomel and blue pill.

8 P.M. Feels much better, and the pains are much relieved. The right eyelid can be lifted up without much suffering, but she cannot raise it by her own exertions. The bowels have been opened, and the stools are copious; she has passed urine once, which is dark-coloured and of an offensive ammoniacal odour; pulse 80, soft and compressible; tongue and skin dry; she is now quite sensible. She has had three spasmodic fits since the morning, but they lasted a very short time.

Oct. 19. Improving; has had no spasm since the last visit; has slept from two till six o'clock this morning; the pain in the right eyeball and eyelid is diminished, and these parts are less tender on pressure; the attempt to raise the lid by the finger is also less opposed by the action of the muscle, but she is still unable to raise it herself; pulse 80, soft and full; gums rather tender. The solution of belladonna was again applied to the blistered surface of the right temple. To continue the pills.

Oct. 20. Considerably improved; she has had no spasms during the night; the pain is relieved, and she does not now suffer any inconvenience in any part of the body; the eyelid is still drawn down, and the tenderness of the eyeball remains, but not so remarkably as before. As her gums were sore, she was now directed to discontinue the pills, and to take some aperient and diuretic medicine. Under this treatment she rapidly improved: the secretions became natural, the tenderness of the eyeball wholly disappeared, and she regained the perfect power of raising the lid. She was discharged cured on the 26th of November; and although I had frequent opportunities of seeing her afterwards, she never had any return of the complaint.

OBSERVATIONS. I think that there can be little doubt, that this was a case of local congestion of the brain, involving the origin of the fifth pair of nerves on the right side. It will be seen that all the parts supplied by the ophthalmic branch of this nerve were acutely painful, and that the pain was also traced to the parts supplied by the superior maxillary nerve; the motor part of the inferior maxillary nerve was also affected, as was proved at one period of the disease, by the spasmodic closure of the jaw. The pain and spasms in other parts of the body are explicable, by recollecting the numerous communications of the ramifications of the fifth pair with other nerves. That it was not a case of mere neuralgia is, I think, proved by the foregoing detail of the general symptoms, by the *incessant* pain and tenderness of the parts supplied by the ophthalmic nerve, and by the decided benefit afforded by blood-letting, purgatives, and mercury; for it will be observed, that the abstraction of blood was attended by marked relief, and that as soon as the mouth became affected, the symptoms began to disappear. It is almost needless to remark, that the case could not have been one of hysteria, which, in some respects it nearly resembled; for the patient never had any similar attack either before or since, and she was of rather advanced age; and the reasons just adduced to prove that the case was not one of neuralgia, will *a fortiori* prove that it was not hysteria; for hysterical affections are not relieved by bleeding, purging, and mercury; nor do they allow of so complete a cure as that which was effected in the present case. The state of the pulse, the absence of heat of the head, and other obvious circumstances, preclude the supposition that the case was one of inflammation of the brain; and on the whole, I am inclined to adhere to the idea that it was one of local congestion; a view which, I think, will explain satisfactorily both the symptoms of the case and its successful treatment.

GENERAL OBSERVATIONS ON CEREBRAL DISEASES. I do not pretend to draw any general deduction from the foregoing cases, which are altogether of an anomalous character. They are quoted chiefly for the purpose of illustrating the extreme difficulty of investigating satisfactorily the phenomena of Cerebral Disease. But, while I reserve to myself, upon some future occasion, the further inquiry into the pathology, the diagnosis, the varieties, the classification, and the treatment of the Diseases of the Nervous System, I think I may add the following practical observations, which, though somewhat indefinite, are perhaps as precise as the nature of the affections, now under consideration, will allow.

1. *Symptoms.* It must be always borne in mind that cerebral symptoms, although exceedingly alike in their manifestations, proceed from causes wholly different from one another. *Convulsions* may arise from dentition, from inflammation of the cerebral membranes, from the pressure of exostoses, or of a spiculum of bone, from the presence of undigested or indigestible matter in the alimentary canal, from worms, from uterine irritation, or from toxæmia. The *abolition of sense or motion*, or that condition called *coma*, may be caused by narcotic poisons, by the inhalation of deleterious gases, by drunkenness, by congestion of the cerebral vessels, by effusion of blood or of serum within the cranium, by

softening of the brain, or by the presence of tumours or hydatids, and also by toxæmia. *The perversion of the intellectual powers* may be due to causes purely mental, as sudden and violent emotions of joy or sorrow; or to the immediate effects of alcoholic drinks, cocculus indicus, and other drugs, as in delirium ferox; or to the abuse of intoxicating liquors, as in delirium tremens (a disease which depends upon the exhaustion of the powers of the Nervous System by excessive and long-continued stimulation); or to inflammation of the brain or of its membranes.

2. *Classification.* It follows from the foregoing remarks, that the only true basis of the classification of the Diseases of the Nervous System is pathology; and that such terms as apoplexy, epilepsy, and hydrocephalus, (words embracing in each case a group of symptoms which may proceed from very different causes), should be discarded from our Nosology, and be employed only to conveniently express certain classes of associated phenomena.

3. *Pathology.* The pathology of the diseases of the Nervous System is to be diligently sought for by *post-mortem* examinations. In making this remark, it must be admitted that, in the present state of our knowledge, the seat of disease in the nervous centres cannot always be precisely determined by the scalpel of the anatomist. But in all fatal cases, the inquiry should be made; and I have no hesitation in stating, that no person can give a positive opinion upon a fatal case of Nervous Disease, unless such an examination have taken place. I should also add, that he who undertakes the task of investigating the morbid anatomy of the nervous centres, ought to prepare himself, by becoming thoroughly acquainted with the appearances and peculiarities of the healthy structures, and should likewise examine the phenomena presented by the brains and spinal chords of persons who have died without any *known* or *recognized* symptoms of Nervous Disease. *No post-mortem examination can be considered complete, unless the state of the brain at least has been carefully investigated, even although the patient has died of some disease apparently unconnected with the nervous system.* Chemistry and the microscope are probably destined to throw much new light on the morbid anatomy of the Nervous System.

4. *Diagnosis.* It is of the utmost importance that the diagnosis of cerebral diseases, although exceedingly difficult, should be as accurate as the circumstances will allow; for upon correct views in this particular, will often depend the life of the patient and the credit of the practitioner.

5. *Treatment.* It cannot be too strongly insisted upon, that the treatment must depend, *not upon the name given to the disease, but upon its pathology as indicated by its diagnosis.* One case shall be benefited by emetics and cold affusion; a second shall yield to opium and brandy; a third shall require physical restraint; a fourth shall be subdued by copious bleeding; a fifth shall require in addition the use of calomel and purgatives; a sixth shall with propriety be left to take its course. All these modes of treatment, judiciously pursued, are advisable in particular cases; but when erroneously applied, may lead to irreparable mischief. Upon the details of treatment, it is not my intention at present to enlarge; but I cannot conclude without emphatically condemning the indiscriminate employment of the lancet in all cases of

cerebral disease, attended with insensibility, or with perversion of the intellectual powers; while, on the other hand, I cannot too highly extol the copious abstraction of blood in appropriate cases. The state of the pulse I believe to be an unfailing criterion as to the necessity of blood-letting, which, when performed judiciously, *and in time*, has often in my own experience, and no doubt in that of many others, succeeded in averting the most formidable and fatal attacks of Cerebral Disease.

8, Torrington Square, March 1850.

ON THE PROGNOSIS AND TREATMENT OF ORGANIC DISEASES OF THE HEART.

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WE find, then, that STRUCTURAL DISEASES OF THE HEART are by no means universally dangerous or fatal in their tendency; but that they are so in proportion as the circulation becomes seriously impaired, either through the extent of the cardiac lesion, or through the additional disordering influence of an ill-proportioned quantity, or a depraved quality, of the blood. It is therefore obvious, that it should be the object of the TREATMENT, in maladies of this nature, to counteract or correct, so far as is possible, those influences which may give to each case a formidable character, and to place the patient under circumstances that shall favour and aid the damaged organ in carrying on the work of the circulation. Nor are these objects so unattainable in the plurality of cases, as might be expected from the vital value of the organ implicated. I know of few instances of structural disease of an important viscus that admit of more mitigation, under judicious treatment, than many Organic Affections of the Heart; and the examples, to which I have already alluded, of these affections enduring for a very long period, gradually increasing to a prodigious extent without destroying life, and sometimes without greatly sacrificing the comfort of the patient, give further proofs that the powers of adaptation and endurance, in this most vital of all organs, are far greater than is commonly imagined.

It may readily be inferred from my former remarks on Organic Diseases of the Heart, that the benefit which the subjects of them derive from medical treatment, depends on neither the activity or energy of the practice employed, nor on any uniformity of plan. In this, as in most intelligible cases of disease, the best practice is that rationally adapted to varying elements of disorder, with a view to restore that balance of functions which is most favourable to the easy action of the defective organ.

I have already noticed the prevailing tendency among many practitioners to treat Organic Diseases of the Heart by sedatives, and other lowering or reducing measures; but, according to my experience, such treatment is applicable only to periods of excitement or exacerbation, and the plan most generally useful, is one calculated to sustain the

powers of the circulation. There is much that is fictitious and partial in the inordinate action and palpitation of a diseased heart. The violent knock against the ribs, and the strong throbbing in the large arteries, are evidences of a force that is misdirected and ineffectual rather than excessive; for, at the same time, the pulse of distant arteries is scarcely to be felt, the extremities are cold, and the capillary circulation generally feeble. Hence, although sedatives may be beneficial as temporary expedients, measures of a sustaining and strengthening nature are more permanently useful. Organic lesions of the heart, in most instances, impair its propulsive power; and it is quite reasonable to expect most good from the means which shall have a contrary influence, by augmenting the steady strength of the organ, by improving the quality of the blood, and by promoting its equal distribution by the removal of obstructions and congestions. It is equally apparent, on the other hand, that these objects are not to be fulfilled by mere stimulants and tonics. The fact is quite familiar to practitioners, that in many instances of Heart Disease, the common spirituous and ethereal stimulants, and the stronger tonics, such as iron and quinine, aggravate the symptoms, and induce attacks of palpitation, oppression, and lividity. Yet this, as well as the opposite class of remedies, is not only borne, but proves most salutary at a proper season and under fitting circumstances. In order to know these seasons and circumstances, it is necessary to revert to the sketch of the pathology of Diseases of the Heart, already given in relation to Prognosis, and to consider it again in its application to practice.

We may conveniently consider the subject under the following heads of INDICATIONS OF TREATMENT.

1. To regulate and promote the moderate and efficient Action of the Heart itself.

2. To improve the Quality, and regulate the Quantity and Distribution of Blood throughout the body.

3. To prevent or counteract the Lesions of Function and Structure which supervene in other organs, in the progress of Heart-Disease.

1. The treatment addressed to the Condition of the Heart itself will vary considerably, not only in different cases, but in the same case at different times. At early periods of organic disease, whether of the valves, investments, or muscular structures, there is commonly a tendency to excitement, manifested by increased action, palpitation, and sometimes pain or some kind of uneasiness in the cardiac region. In inflammatory and plethoric subjects, this excitement may either amount to inflammation, or assume some of those forms of excessive and vitiated local nutrition, which tend to further disorganization of the organ. Under such circumstances, there can be no doubt of the propriety of antiphlogistic measures, proportioned to the severity of the symptoms. In the absence of marked plethora or decided pyrexia, local depletion or counter-irritation will generally suffice, especially if aided by the means afterwards to be noticed for reducing the stimulating property of the blood.

The instances in which general blood-letting is called for in Organic Diseases of the Heart, are, according to my experience, rare. I do not deny that it will often, for the time, relieve strong action of the heart and vascular excitement more promptly than any other means; but it

generally leaves afterwards a weakness and irritability of the organ, which unfits it for the regular work of the circulation, and which, therefore, so tends to the recurrence of congestion, oppression, and excitement, as to call for a repetition of the blood-letting. Thus the blood becomes impoverished, and the constitutional powers lowered; and not only is there added the complication of anæmia, which I before noticed as a common result of such treatment, but the power of the excreting organs fails also, and cachæmia, dropsy, and degenerations, may ensue. As in other cases of defective organization, it is a great object to sustain the constitutional powers; and we must not lose sight of this in our endeavours to reduce local inflammation and temporary excitement.

Cupping, leeching, and blistering in the region of the heart, aided by mild mercurials, antimonials, sedatives, and salines, with moderate diet and rest, will be found safer measures than venesection, and are generally adequate to reduce the excitement of the heart, even in inflammatory and plethoric subjects. Dry cupping extensively used,¹ and counter-congestion by hæmostatic ligatures on one or more limbs, (as for venesection), are also available means for relieving the heart from the weight and stimulus of the blood, during periods of temporary sthenic excitement.

But in many examples, particularly in persons of nervous temperament, in females, and in connexion with dyspeptic and other sympathetic disorders, the excitement of the heart is much more nervous than vascular. The suddenness and variability of the paroxysms of palpitation or painful action; their disproportion to other symptoms; the prevalence of other signs of nervous excitement or disturbance, such as spinal or superficial cutaneous tenderness, various spasms, globus hystericus, copious diuresis, etc., will generally guide to the distinction of this kind of inordinate action: and if the subject be not positively anæmic, there will generally be sufficient evidence of the absence of any real strength in the vascular system, in the general pallidity and low temperature of the surface and extremities, and the weakness of the pulses in the limbs, as compared with those of the palpitating heart. Under such circumstances, nervous sedatives are more appropriate than depletion; and local irritation or partial fulness of blood is sufficiently counteracted by derivants, evacuants, and means which increase the natural excretions. Of the class of nervous sedatives, those which have an obvious influence on the Heart are to be preferred, especially the following, which I place in the order in which I find them most effectual: hydrocyanic acid, aconite, digitalis, camphor, and henbane. The sedative action of all these is promoted by combining them with an alkaline carbonate, which fulfils another indication to be noticed hereafter. In the hysterical or otherwise more nervous kinds of palpitation, the medicines generally called antispasmodic, such as the foetid gums, valerian, bella-

¹ To save the blood by dry cupping, the exhaustion of the glass should not be carried so far as to induce much ecchymosis. If blood be extravasated, it is lost as blood; and if reabsorbed, can be useful only through a new process of solution and assimilation. Even in the process of counter-congestion, the blood may be injured by long stagnation; as I have shown it to be spoiled and unfit for further use, after it has been long pent up in congested organs in intermittent and adynamic fevers. *Principles of Medicine*, second edition, pp. 118, 196.

donna, stramonium, and æther, mostly in conjunction with the volatile alkali, will be found to afford more relief. It is curious to observe how, under the influence of some of these which may be considered stimulant, the heart's action sometimes becomes calmed; but it would be commonly found in such cases, that although the organ throbs violently, it does not effectually expel its contents, and the pulse of distant arteries is extremely weak: the diffusible stimulant, by exciting a more energetic contraction, propels the oppressive load of blood, and restores the equality and quietude of the circulation. The combination of the two kinds of medicaments, the nervous sedatives with the muscular stimulants, is neither irrational in theory, nor inefficacious in practice; for I have frequently obtained from the united operation of hydrocyanic acid and valerian, aconite and galbanum, or digitalis and æther, marked advantage, which the agents separately failed to afford. Another expedient which, in a few instances, has proved very effectual in subduing the violent action of a palpitating heart, is a copious draught of cold water. This may operate sympathetically, by soothing the heated and irritable surface of the stomach; but I am inclined to consider its operation in some measure direct on the heart itself, which is quite near enough to the stomach and œsophagus to receive the impression of cold from a large bulk of water. Small pieces of ice swallowed in succession have a similar effect.¹ This measure would not be expedient in persons liable to syncope; for this opposite condition may result from the sudden reduction of the palpitation by cold.

The measures hitherto recommended are chiefly of a temporary nature, to subdue or moderate excessive action of the heart, when it is first developed, or aggravated during seasons of excitement. There are others of more permanent operation, inadequate and even unsuited for these occasions, but applicable in the intervals between the attacks, to which they in some measure may prove preventives. I allude to the agents generally called tonic, which are, much more generally than is commonly supposed, applicable to the treatment of the Organic Diseases of the Heart. Much caution and discretion are necessary in their selection and administration. Thus, in the more inflammatory cases, nothing stronger than the mineral acids or weak vegetable astringents may be borne. A class somewhat less sthenic may tolerate and receive benefit from salts of zinc or silver, tannic or gallic acids, and weak chalybeates combined with salines. A third group, bordering more on the anæmic and irritable condition, with much action but no strength, bear the more decided tonics of iron and quinine; especially when guarded by some of the sedatives before noticed, such as hydrocyanic acid, aconite, etc. But for the useful and even safe administration of all tonic remedies in connexion with an injured and irritable heart, it is essential that the secretions be free; and, in order to ensure this, it is often necessary to resort to the means to be presently noticed, as tending to maintain the purity of the blood. It is quite intelligible that tonics, which, in a relaxed system with free secretions, fortify the muscular and vascular

¹ In my experiments on animals, the power of slight applications of cold water, to moderate the turbulence and increase the steady force of the exposed heart, was, in some instances, very remarkable; but when freely used, it caused a quivering contraction, which soon suspended all movement.

fibres by bracing them and promoting their contractile power, may further obstruct those secreting organs whose function is imperfect, and thus add to the disorder which their failure occasions.

We have next to notice the opposite dynamic condition of the Diseased Heart, that of defective action. In many instances, this is combined with irregularity of rhythm, or inequality of pulse; but the irregularity and the failure are by no means proportioned to each other; for weak hearts sometimes show no intermission in their action; and considerable irregularity may occur without any prominent signs of weakness. Still, as a general rule, it may be laid down, that irregularity of rhythm, and inequality of strength in the pulse, belong to the class rather of defective than of excessive power of the heart, especially as regards its efficiency in carrying on the circulation. More or less irregularity or inequality of pulse is commonly observed in connexion with the following organic lesions, which distinctly impair the propulsive power:—Extensive valvular disease, especially of the mitral orifice:¹ dilatation with or without moderate hypertrophy; fatty degeneration and softening, connected with partial obstruction of the coronary arteries. Advanced stages of severe pericarditis, and adhesions of the pericardium, present a remarkable kind of inequality, and even intermission, in the radial pulse, whilst the heart's pulsations are quite regular; in fact, some of the latter are too weak to reach the wrist, hence the irregularity; and I have distinctly ascertained that the weak, or deficient beats, are those corresponding with inspiration, whilst the stronger pulses are those enforced by the expiratory act, which thus helps the weak heart, and augments its propulsive power. So it often happens, that the act of coughing gives a momentary strength to a weak pulse.

It must not be inferred from the preceding remarks, that irregular action is necessarily connected with organic disease. Nothing is more common, than to find the heart acting irregularly when exhausted from fatigue or other undue excitement; or when disturbed by deranged digestion, bilious disorder, or a gouty, or otherwise depraved state of the blood. These conditions are only temporary, and amenable to treatment; but if the irregularity should continue for several weeks, in spite of treatment, there is reason to suspect the existence of structural disease; and, in the absence of signs of valvular lesions and dilatation, fatty degeneration or softening may be apprehended.²

It may well be anticipated, that the chief remedies to be recommended for defective and irregular action of the heart, are of the stimulating and sustaining kind; but although this so far holds good that it may be taken as the rule, it cannot be applied without considerable qualification

¹ Obstructive lesions more particularly. In my experiments on animals, I found that nothing disturbed the regularity of the heart's action so much as obstruction of the left auriculo-ventricular orifice, by pushing the walls of the auricle into it with the finger.

² A very complete and interesting memoir on Fatty Diseases of the Heart has recently been read to the Royal Medical and Chirurgical Society, by my friend Dr. R. Quain; and, when published, will be found to contain the most valuable information on the history and pathology of these affections. Dr. Quain has completely verified my inference, that fatty degeneration is a chemical change, like the spontaneous change of muscle into adipocere. [An abstract of this paper will be given in our Reports of Societies, which, from the unexpected length of the Original Articles in the present number, we are reluctantly obliged to defer till June. EDITORS.]

and tact. The same organic lesion in the heart which forms an objection to the unguarded use of depletion and reducing means during inordinate action, is an obstacle to the free administration of stimulants and tonics during depressed or irregular action. It must not be forgotten that we have to deal with a damaged mechanism, which, in a state of weakness, may as ill bear the goad of a stimulant, or the bracing of a tonic, as, in a state of excitement, it can sustain the loss of much blood, or of that which contributes to its regular support. In syncope, or extreme weakness, with a healthy heart, we need not fear to excite its failing powers by strong stimulants, and to maintain them by the most bracing tonics; but in a diseased organ, similar forced excitement may strain, irritate, or rupture the faulty structure, before it can restore the balance of the wanting power.

It often happens, therefore, that we have to premise or combine with the use of stimulants and tonics, means to relieve the heart of some of the oppressive load which it cannot propel. A few leeches, a moderate cupping, or a blister over the heart, or, in slighter cases, derivants to the extremities and secreting organs, may accomplish this end, and enable the stimulant to operate on the contractile power of the organ with greater certainty and safety. So, too, the various aids to an embarrassed circulation, afforded by warmth to the surface and extremities, gentle friction, and appropriate changes of posture or exercise, will generally be needed during the continued action of tonics. With due attention to these points, most cases of Organic Disease of the Heart with defective action may be bettered for a time with tonics; and if under this treatment the local lesion, being of the nature of chronic inflammation, should show any tendency to increase, counter-irritation, with the moderate internal use of mercury or iodide of potassium, may be employed to counteract it. The tonics most suitable to augment the strength of the heart have already been noticed; for the condition of habitually defective action, the strongest kinds, if borne, are to be preferred, such as iron, quinine, tannic and gallic acids. Advantage sometimes results from combining two of these that do not form an insoluble compound, as sulphates or citrates of quinine and iron or zinc, and tannate of quinine. But the selection must also much depend on the condition of the blood as well as on that of the heart, and to this subject we now proceed.

2. The regulation of the Quantity and Condition of the Blood is an object of great importance in diseases of the organ which, more than any other, is liable to be influenced by the blood. But it will not be needful to dwell long on the means by which this indication is to be fulfilled, because they are the same as are usual in diseases of the blood. Thus, in states of plethora, the excessive quantity and richness are reduced by depletion, evacuants, and low diet; but, for reasons before stated, it is needful to take care that these be not carried too far. In asthenic plethora, the purification of the blood, by increasing the secretions and promoting its more active and steady circulation, is of more avail than depletion; this subject will again claim our attention. A cause of temporary plethora, which often seriously operates in aggravating Heart Disease, is too liberal an indulgence in liquids of any kind, especially during meals. Experience often teaches patients the advantage of moderation in this respect; and as copious libations at meals

are more the result of habit than of real want, and are frequently substituted for slow and careful mastication, there is good reason to discourage them. If thirst should prevail, or if a freer supply of liquid is wanted to help the processes of elimination, water, or some very simple beverage, may be taken on an empty stomach, when it is more speedily distributed through the alimentary canal, and, being absorbed, promptly passes off by the kidneys and skin.

I have already adverted to the common combination of structural Disease of the Heart with anæmia or chlorosis. As before hinted, the scantiness and poverty of the blood is frequently the result of the injudicious employment of depletion, low diet, confinement, and other lowering measures, by which it has been erroneously supposed that Diseases of the Heart are to be controlled. In other instances, however, especially after rheumatism, by whatsoever means treated, the anæmic condition arises spontaneously; and apparently proceeds from want of power in the system to renew the blood that becomes depraved and *effete* by the morbid changes which have taken place in it. After other acute diseases, such as inflammations and fevers, which injure the quality of the blood, the same deficiency of red particles often occurs; and if there be a lesion of the heart present, its impairing influence on the circulation is more seriously felt. The treatment usually proper for anæmia is required for these cases; and I have before mentioned, that the heart symptoms are ultimately relieved, as the heart and vessels become invigorated by more and better blood: but here too, the presence of the Heart Disease renders it necessary to proceed cautiously and slowly in the administration of iron and other tonics. The first doses often aggravate the pain and palpitation of the heart; and it is therefore expedient that they should be small, and combined with hydrocyanic acid or some other sedative, and increased gradually, so soon as they are tolerated. As, in most cases of chlorosis, the secreting organs commonly require the aid of gentle aperients and diuretics, so these are particularly needful here, where any retention of excrementitious matter would tend to irritate the damaged organ, and render it intolerant of the bracing influence of iron. Under similar circumstances, the iodide of iron has appeared to answer better than other preparations, probably from its influence on the capillary circulation and secretion; or a combination of iodide of potassium with the citrate or acetate of iron, which is less liable to decomposition than the iodide of iron itself. In the anæmic state of the system with structural Disease of the Heart succeeding to rheumatism, this combination is especially salutary.

It is not necessary to dwell on further details of the treatment calculated to improve the quantity and quality of the blood in connexion with Heart Disease; but it would not be right to omit the mention of the salutary influence of pure country air, and the full effulgence of a sunny sky, on the sanguiferous system. I have known several instances, in which, with considerable organic disease, invalids have attained a degree of strength and constitutional vigour, by passing the greater part of the day *sub dio*, which they never could gain from any system of medication. A long sea voyage has a like salutary influence, but it would not be safe for those liable to severe sea-sickness.

Further in relation to the blood, we have to notice the means by

which its quality is to be improved by the removal of excrementitious and other noxious matters. Of the importance of these we have already had so many proofs in almost every bearing of the subject, that we have been obliged to anticipate much of what belongs to this head. In every degree and kind of Organic Disease of the Heart, we find that a deficient quantity or vitiated quality of the excretions is the common precursor or concomitant of aggravated symptoms; and from the marked manner in which remedies which augment and improve the secretions bring relief, we are constrained to infer, that the failure of this purifying process, and the consequent accumulation of noxious matters in the blood, is the common cause of the exacerbations of Heart Disease. And in truth, it will be found that most of the various disturbing influences that may be regarded as the *lædientia* in Heart Disease, agree in this respect, that directly or indirectly, they impair the processes of elimination, and that their permanent operation is chiefly connected with this effect. Thus over-exertion of the body, or agitation of the mind, bring on palpitations, pain, and other severe symptoms; but rest and tranquillity will generally remove these, provided the secretions continue free. But if the secretions have become impaired, which they commonly are where the fatigue or excitement have been considerable, then no relief ensues till these functions are restored. A fit of indigestion, exposure to cold, or confinement in an impure atmosphere, may bring on a severe aggravation of the symptoms of Heart Disease. This will be transient or enduring, generally in proportion as the processes of secretion by the kidneys, bowels, and skin, are slightly or seriously deranged. In a similar manner, the onset of febrile diseases, influenza, gout, rheumatism, erysipelas, and the like, attended as they always are by impaired secretions, never fails to bring on an exacerbation of the symptoms of Organic Disease of the Heart.

This very general fact with regard to the aggravations of Heart Disease renders intelligible what is quite familiar to experienced practitioners, although they may explain it in different ways, that the best remedies under these circumstances are those which increase the secretions of the liver and intestines, the kidneys, and the skin. A few doses of mercurial aperients, with salines and other diuretics and diaphoretics, do more to relieve the symptoms than any treatment exclusively addressed to the heart; and if they do not succeed in mitigating the more distressing parts of the malady, they at least prepare the system for sedatives, antispasmodics, and tonics, which then act with safety and effect.

In cases, therefore, of exacerbation of the symptoms of Organic Disease of the Heart, sometimes in addition to, sometimes without the measures before recommended to affect the organ primarily, we commonly administer a mercurial purgative every night or every other night, until the secretions from the intestines give evidence of a free elimination of bile. We may combine with the mercurial a little squill and digitalis, with the view to excite a fuller flow of urine; and to promote the same object, we exhibit various saline solutions with an excess of alkali or of its carbonate,¹ during the day. These are the medicines which I find most

¹ The salts of soda, potash, and ammonia, with vegetable acids, or with nitric or phosphoric acid, answer the best.

constantly useful in relieving the exacerbations of Heart Disease, through their action on the secretions; but there are many others capable of giving supplementary or succedaneous aid, or that are specially suited to particular cases. Of these I would mention colchicum, iodide of potassium, hydrochlorate of ammonia, benzoate of ammonia or potash, taraxacum, tincture of cantharides, compound spirit of horse-radish, and infusions of uva ursi, pareira, and digitalis, as those which have the least frequently disappointed me in their effects. So soon as some or other of these medicines, alone or in combination, have succeeded in restoring the secretion which was defective or depraved, something of a strengthening kind, such as a bitter tonic, or chalybeate, may be advantageously added, as it will counteract the weakening operation of the eliminatory medicines, and improve the powers of digestion and assimilation.

Besides improving the quality of the blood, we have, comprised under the present head, the indication to promote, regulate, or equalize its distribution. The means which best contribute to the fulfilment of this indication, are chiefly the various expedients which promote the circulation of the surface and extremities, such as gentle exercise, friction, warm clothing, and artificial warmth. In proportion as these means augment the quantity and accelerate the flow of blood in the superficial and extreme vessels, the heart will be lightened of some of its load, and internal organs will be relieved of some of their congestion. It is obvious that these measures will be more salutary in cold, than in warm seasons: in fact, in very hot weather, they may become hurtful, by withdrawing from the heart too much of its proper stimulus, and thus inducing faintness and extreme weakness. Under these circumstances, cool astringent applications to the surface, as by sprinkling with water, sponging with vinegar, and the refreshing influence of a cool breeze, with the horizontal posture and rest, will restore the circulation and help the flagging heart.

3. The last indication is to prevent or counteract the Lesions of Function and Structure, which supervene in other organs in the progress of Heart Disease. The measures which we have just recommended as suitable to improve the condition of the blood, are those also which succeed best in correcting functional disease, and preventing structural changes; but a glance at the tabular sketch before given, of the secondary effects of Diseased Heart on other organs, suggests the importance of directing the treatment especially towards any of these that give signs of suffering. It may be observed, that the first morbid condition of the organs thus secondarily affected is, for the most part, congestion, or irregular flow of blood with disordered secretion: then follow exudations or deposits, altering the structures, and more permanently impairing the functions: lastly ensue the contraction, induration, or fatty or calcareous degeneration of these deposits, still further subverting the organisation and reducing the vitality of the structures. It is not necessary to discuss systematically the means by which we might hope to retard the development of these formidable evils: in some instances, these will sufficiently suggest themselves, on a rational consideration of the subject in its pathological and therapeutic bearings; in others, science and art fail to help us. But I will conclude this paper by the mention

of a few expedients which have sometimes succeeded in rescuing patients, for a time, from the fearful emergencies into which Organic Disease of the Heart, with secondary complications, tends to plunge them.

In case of structural Disease of the Heart, complicated with affection of the liver, in addition to the treatment for the former, it is necessary to use mercury more freely, with a view to its cholagogue effect. The combination of blue pill, squill, and digitalis, is commonly suitable, and may be given from once to three times a day, until the gums are slightly affected, or a slight bilious diarrhoea or copious diuresis ensues. In most instances, the addition of a little narcotic, such as extract of conium, henbane, or poppy, is useful, to prevent the irritation of the medicine on the bowels. Cupping, blisters, and other counter-irritants to the right hypochondriac region, often do good for a time; after their use, and that of mercury, nitro-muriatic acid lotions and foot-baths, and the internal exhibition of extract of dandelion, with muriate of ammonia and nitrate of potass, will sometimes in a decided manner promote the secretion and ameliorate the condition of the liver. Saline purgatives, which derive freely from the portal system, are also occasionally useful, especially if there be any tendency to hæmorrhoids or ascites.

The complication of kidney-disease, evinced by the presence of albumen in the urine, is, in its early stage, by no means so intractable as is commonly supposed. Cupping and large blisters to the loins, with a few doses of hydragogue purgatives, have often succeeded in restoring the urine to a healthy state, and removing all symptoms of this complication, even where it had proceeded to the length of causing dropsy. The hydragogue most suitable to these cases, is the bitartrate of potass, in doses of from half an ounce to an ounce taken fasting, with a little ginger syrup in water. Its operation, if tardy, may be quickened by the addition of a few grains of gamboge or jalap, or a drop of croton oil; but these offend the stomach and injure the appetite more than the cream of tartar alone. The same objection exists against elaterium, which has the further disadvantage of sometimes seriously depressing the heart's action; but when other means fail, we are constrained to resort to it; and although it gives him a terrible shake, it will sometimes rescue a patient from the rising waters of the dropsical flood. It has appeared to me to disorder least, when given in the dose of from a quarter to half a grain in a pill, with two or three grains of calomel and a drop of creasote. Mercury is generally considered unsuited to cases of albuminuria, on account of its tendency to cause excessive and depressing salivation, even in small doses: but this effect is, I believe, confined to the more advanced stages of kidney disease, in which the urine is of low specific gravity as well as albuminous. Where, together with albumen, there is a considerable amount of urinary matter, whether dissolved as urea, or precipitated as lithate of ammonia, and especially when the urine is also acid, I find mercury to induce no such excessive influence, but to be valuable in aiding the operation of other purgatives and diuretics. After blisters and hydragogue purgatives, sometimes aided by the warm bath (which, however, I have found very uncertain), have somewhat relieved the congestion of the kidneys, they become amenable to the influence of some diuretics, particularly digitalis, taraxacum, scoparium, diosma, with iodide of potassum, acetate

of potass, benzoate of ammonia, or some of the saline diuretics before mentioned. The tincture of cantharides is also suited for this period of the treatment; and although an uncertain diuretic, and one that should not be continued if it do not speedily operate, it sometimes restores the lost powers of secretion better than any other remedy. It may be given in doses of from ten to forty minims, combined with bicarbonate of potass, mucilage, and a little henbane or conium. The longer the renal complication lasts, the more it impairs the quality of the blood, and produces spanæmia and tendency to dropsy; and it becomes an object to counteract this by the exhibition of iron. Generally, this remedy is not well borne; soon causing a diminished flow of urine and increase of albumen: but in some instances, a few grains of citrate of iron, or a few drops of the muriated tincture, have been added to a diuretic draught with safety and advantage. In proportion as the renal disease becomes confirmed and permanent by the substitution of exudation matter for the proper secreting cells, and by the subsequent fatty degeneration of this matter, or by its off-casting and the atrophy of the organ, the case becomes less and less susceptible of relief. The blood, impoverished, yet loaded with excrementitious matter, irritates all the organs and vessels through which it passes; and not only are the cavities and cellular textures distended with dropsical effusions, but low inflammations occur there also, and harass the patient with a variety of new sufferings, before his final deliverance. In many instances, I have ascertained the presence of urea and uric acid in the serum thus effused; and I have known the impregnation so strong, that the liquid, oozing from punctures in the legs, or from an unhealed tap-wound of the abdomen, has had a strong urinous smell, and has been found actually to contain more urea than the serous fluid which has passed by the kidneys. It is not marvellous if medicine can do little in such a subverted order of function and structure; but it has appeared wonderful to me how life has been retained, and the diseased heart has gone on working, in some instances, for days, and even for weeks, in apparent defiance of all that are commonly considered as the laws of the functions. Almost the only useful treatment in this extremity, is by stimulants: and in addition to the usual vinous and spirituous forms, which are often tried in their most attractive varieties, as they may best please the palate of the poor sufferer, I may mention the chlorate of potass, as a medicine which seems, sometimes, to have a kind of reviving effect even in such extreme states. In doses of from five to fifteen grains, with carbonate of ammonia and a little syrup and water, it may be given every hour or two: it sometimes seems to rekindle the dying embers of life so distinctly, as to make one again reflect on a parallel (which has been only revived by Liebig) between vital chemistry and the process of combustion.

Pulmonary complications with Diseased Heart, in their moderate degrees and early stages, are readily reduced by cupping and blisters, or extensive rubefacients on the dorsal surface of the chest, mercury, antimony, salines, and expectorants. Attacks of asthma, connected with Diseased Heart, commonly depend on pulmonary congestion, sometimes exciting bronchial spasm, and ending in bronchial flux, and are relieved by blisters, or other counter-irritants, antispasmodics, and expectorants or derivants. More intense degrees of congestion pass into

pulmonary apoplexy or hepatisation, which, if extensive, may seriously impede the passage of air and blood in the lung, and may proceed to degeneration and further disorganization. These are among the most formidable complications of Diseased Heart; and, unless treated before they have involved much of the lung, they are among the most rapidly fatal.

Disease of the larger arteries, when in connexion with organic lesions of the heart, requires due consideration in the treatment. At its early period, it is usually more or less inflammatory, and may require moderate antiphlogistic treatment, by small local bleedings, mercury, and iodide of potassium, with salines. But there is an early tendency to deposits, degeneration, and partial dilatation in the coats of the arteries; and to counteract these, tonic, astringent, and generally invigorating remedies, are more suited. Combinations of iodine, with nitric acid, preparations of zinc, tannic and gallic acids, and astringent chalybeates (such as the muriated tincture, and sulphate of iron with alum), have appeared to be serviceable in some of these cases, in controlling the undue pulsation and disturbance in parts. The cod liver oil, too, has proved beneficial in a few instances; probably, by softening the solid fatty matter of degenerating deposits, and thus rendering them more amenable to the processes of absorption and healthy reparation. Where more serious disease in the arteries, such as ossification, partial obliteration, aneurism, or great dilatation, has taken place, it becomes of great moment to keep the circulation as equal as possible, but without reducing its strength or impairing the quality of the blood; and in this way may be averted the further degeneration, wasting, and even death, of textures, which are apt to ensue in parts nourished by the injured vessels.

These observations have extended much further than I originally intended, yet the subject is far from being exhausted. The length of the paper, however, warns me to conclude the subject with a few words on the general regimen suitable to cases of Organic Disease of the Heart.

Throughout this paper I have endeavoured to keep in prominence the general fact, that Organic Diseases of the Heart tend to weaken, rather than to excite the bodily powers, and that therefore they are the proper objects for a sustaining and invigorating, rather than a lowering plan of treatment. The same position holds good as a general rule with regard to diet and regimen. Although exceptional deviations must be made in case of temporary plethora, inflammation, considerable congestion, and feverish states of the system, yet the diet should generally be as nutritious as the appetite and power of digestion can *comfortably* bear. On this subject I will quote the following conclusion of a lecture of mine, delivered fourteen years ago.

“The diet should generally be of as nourishing a quality as will suit the digestive organs, and will not produce plethora or inflammation. It is a great mistake, to suppose that Diseases of the Heart are to be cured by starving. Except when inflammation is actually present, or in case of hypertrophy with continued increased action, or where pulmonary hæmorrhage or apoplexy is threatened, the diet should be one of moderation, but not abstemiousness. In most cases, real strength in the organs of circulation, and in the muscles generally, is defective, whilst the irritability of the nervous system is undiminished. Now, if tone

and strength are to be given to the muscular system, and tranquillity to the nervous, by any mode of diet, it is by one of a nutritious character, with a due proportion of good animal food; and whilst it may be necessary to limit the proportion of the meat, and vary its mixture with less nutritious articles, especially farinaceous, according to the state of the digestive organs and the wants of the system, it is particularly important that in no case should the food, whether solid or liquid, be bulky in quantity. A distended stomach is apt, both mechanically and sympathetically, to excite or disorder the heart's action; and many are the individuals who suffer from palpitation under such an influence, while, at other times, they are scarcely sensible of it. The quantity of liquid food should also be limited, for a reason that I have already stated, to keep down the mass of the circulating fluid. It is very common for patients with diseased hearts to suffer severely from drinking too freely, although it be only of tea or water. The appetite for excessive quantities of drink, is more the result of habit than of real want: by exercising a little self-denial in the first instance, the feelings of thirst gradually abate; and comfort and health are alike retained by drinking sparingly.

"The expediency of avoiding active exertion is so obvious, that I need not dwell on it; but there are particular kinds of exertion, which, without appearing to be violent, greatly try the heart's powers. I would instance walking up stairs or up hill, or using even moderate exertion in a constrained posture. Against these the patient must be particularly cautioned. I have known great improvement ensue on a patient removing from a house and country in which he encountered stairs or hills at every turn, to those in which all was nearly on a level. This point is the more important, because moderate exercise is in most cases highly beneficial; and the more of this that can be taken in open, healthy air, without inducing fatigue, the better for the strength and regularity of all the functions. This must be done in some cases only on foot; but it is desirable to vary the mode of exercise, and to those accustomed to ride, no motion is more suitable or salutary than the gentle paces of an easy horse. Where riding is not borne, carriage exercise is the only other resource; and it may well be combined with walking, but when taken alone, it is inferior to either of the others. Travelling by easy stages about a pleasant country, is sometimes beneficial in many ways—by the amount of moderate exercise, the change of air, and the mental amusement which it affords. In the intervals of exercise, which constitute the greater part of the day, it is very essential that the body should really be at *rest*; and by easy horizontal or inclined postures, on sofas, couches, or other contrivances, that the labour of the heart be aided as much as possible in propelling the blood to all parts. When the capacity for exercise fails, it is proper to assist the defective circulation, particularly in the extremities, by daily friction. In all cases this may prove salutary, by promoting the function of the extreme vessels and the skin. With the same object, it is highly important to have a sufficiency of woollen clothing; and if the skin is habitually dry, its condition may be improved by warm salt water baths. In a relaxed state of the surface, sponging freely with tepid or cold salt water or vinegar, followed by friction, proves equally salutary.

"Moral and mental quietude is most desirable, but here again not inactivity. According to the natural dispositions, various degrees of mental occupation and social intercourse are necessary; and so strongly is the action, and thence the structure of the heart, influenced by metaphysical causes, that there is no morbid circumstance more pernicious than violent mental passions, and no medicine, in chronic cases, so salutary as the calm enjoyment of agreeable social relations, and of amusing intellectual pursuits. We speak *practically* not less than *poetically*, when we place these passions in the human heart; and as we hear of many a whole heart rent and broken with grief and trouble, or burst with unbridled passion, we may well judge what havoc these feelings may cause in a heart already unsound. It is not often ours to "minister to a mind diseased, or cleanse the stuffed bosom of that perilous stuff that weighs upon the heart;" but we may often enlist the patient's understanding and well-grounded fears on our own side, when we counsel him sobriety in his sorrow, and calmness in his care: on us may devolve the privilege and responsibility (and in no case does the conscientious physician, with his best exertions, more need Divine help to direct his judgment aright) of advising and deciding with regard to important changes in the relations and occupations of his future life."—*London Medical Gazette*, 1838.

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A CASE OF MUCO-ENTERITIS, FOLLOWED BY ACUTE PERITONITIS, TERMINATING IN EFFUSION INTO THE ABDOMINAL CAVITY,

RELIEVED BY PROFUSE SEROUS DISCHARGE FROM A SPONTANEOUS OPENING OF THE UMBILICUS BY ULCERATION, FOLLOWED BY PROLONGED SUPPURATION, REPEATED HÆMORRHAGE, AND STERCORACEOUS VOMITING.

By ALEXANDER KNOX, M.D., Physician to the Dispensary, Strangford, County Down, Ireland.

CASE. J. S., an agricultural labourer, about thirty years of age, had enjoyed good health, until about a fortnight before his application at the Strangford Dispensary. At the period alluded to, he had been confined to bed for two or three days, but the precise nature of his indisposition had not been ascertained. It had, however, caused much debility, from which he was not yet recovered. When I first saw him, Oct. 26, he complained of acute pains about the umbilicus, and costiveness; for which a draught of castor oil and laudanum was administered, and he was directed to have hot fomentations repeatedly applied to the abdomen. The bowels were moved with considerable difficulty, and the constipation was followed by obstinate fæcal diarrhœa; but the discharges were neither scybalous, mucous, nor bloody, nor was any tenesmus present. The patient, however, was flushed, the pulse was quick, and there was obscure abdominal tenderness, increased by pressure. Leeches and fomentations were

assiduously employed, and calomel and opium, and afterwards hydrargyrum c. creta, combined with the hydrochlorate of morphia, were prescribed in repeated doses, with the view of effecting mercurialization of the system. On the sixth day, acute tenderness, on the slightest pressure on the surface of the abdomen, and tympanites, clearly indicated the extension of the inflammation from the mucous and muscular intestinal tissues to the peritoneum. The treatment above indicated was pursued with renewed energy, with the addition of the production of full and extensive blistering over the site of the inflamed viscera, with Brown's cantharidine, which acted very efficiently; but all failed to arrest the acute peritonitis, which had supervened on his original disease. In four days from the appearance of the peritoneal symptoms, and on the tenth of the patient's illness, I became satisfied that effusion had commenced, and indeed proceeded to some extent, as the feverishness had in some degree abated, and the tympanitic distension was replaced by a more firm condition of the abdominal swelling.

The indication now was of course to promote absorption, and support the patient's strength. Mild but nutritious food, chiefly farinaceous, was liberally allowed, as the fæcal diarrhœa still continued unabated, causing many times in the day a profuse discharge, which opium, rhatany, kino, catechu, the diacetate of lead, and various other astringents, alone, or combined with gentle aperients, had failed to moderate. Mercury was continued in the form of the grey powder: but his constitution was scarcely affected, either by this, by calomel, or by the application of strong mercurial ointment, which had been applied both as a dressing to the blistered surfaces, and by inunction to the interior of the thighs. The presence of fluid, hitherto a matter of inference, now became certain, as distinct fluctuation could be felt within the abdomen; and the question was placed beyond doubt, by the profuse discharge of serous fluid from a spontaneous opening at the umbilicus. This event, however rare, a prominence at that point had led me to anticipate, and, in consequence, to prepare the mind of the patient, now weakened and anxious from his severe illness, to expect what might happen. The anticipated rupture occurred on the night of the twenty-first day of the patient's illness. The fluid, poured out in considerable quantities, nearly resembled, for the first day or two, pure water; it then assumed the appearance, both in consistence and colour, of unboiled oat-meal flummery, and finally became simply purulent. The pulse meanwhile fell from 120, successively to 90, 80, and 74 beats in the minute. Emollient poultices were applied to the umbilicus; wine and broth were allowed, and a mixture containing the tinctures of opium, cinchona, and catechu, combined with spirit of nitrous ether, given in full doses. The purulent discharge from the umbilicus from time to time assumed a brownish colour, evidently from the admixture of some blood. All the medicines hitherto used had failed in arresting the profuse diarrhœa, which was latterly mixed with mucus, and occasionally of a watery nature; and as this discharge, together with the abundant formation of pus, began to tell on the patient's strength, who became hectic, and subject to profuse night sweats, the diacetate of lead in three-grain doses, combined with one grain of opium, was now prescribed, with occasional draughts containing the compound tincture of rhubarb. A line of treatment which first

seemed to control the symptoms. But the discharge of pus, sometimes mixed with blood, and at other times pure, still continued; and pure blood, although not in large quantities, came away at intervals from the small opening at the navel.

On the whole, however, the patient was gaining ground; when, on visiting him on the 29th of November, in company with my friend Dr. Hunter, of Bryansford, we found the patient very low and much debilitated, from the effects of loss of blood, free hæmorrhage having taken place from the umbilical perforation during the night. The discharge had, however, ceased either spontaneously, or from the effect of applying cloths, dipped in cold water, and a mash of matico leaves to the opening—measures which his attendants had been directed to use, in anticipation of what actually occurred. When the hæmorrhage took place, the remedies above indicated had completely arrested the most urgent symptoms, and the patient had been perfectly free from pain and diarrhœa for the preceding five days. No additional light was thrown on the condition of the viscera, by the most careful examination; except that the liver, especially at its margin in the left hypochondriac region, seemed more dense and firm to the touch, than it had appeared to be on previous examinations. No pain, however, was felt on pressing it, and the increased density was probably only the result of congestion. Perspirations and hectic still continued. The continued use of matico to the part, and the most perfect quietude in the horizontal position, were enjoined, to guard, as far as possible, against a recurrence of the hæmorrhage, which, in the weakened condition of the patient, might have been attended with fatal consequences. Wine in due quantities, and opium in full doses, at bed-time, were allowed.

In three days the patient had rallied considerably, no recurrence of hæmorrhage having taken place, but a horribly fetid chocolate-coloured sanies continued to ooze from the umbilical opening. This dark admixture, with the pus, and the sickening fœtor, probably arose from the putrefaction of the blood, which had been discharged into the cavity of the abscess, from whence issued the purulent matter, and some of which had lodged there, not gaining a free exit at the umbilicus. It seemed pretty evident that a circumscribed abscess had formed, which had, by glueing its anterior borders to the parietes of the abdomen, directed the purulent matter to the exterior, and prevented thereby the fatal results to be apprehended from its diffusion through the cavity of the abdomen. On the fifth of December, there had been no return of hæmorrhage, nor was the pus which continued to flow, although still of intolerably fetid odour, much tinged with blood. His bowels were regulated with small doses of castor oil; and an accidental recurrence of the diarrhœa was checked by a draught containing tincture of rhubarb, calcined magnesia, and laudanum. On several occasions, a very considerable quantity of pus, mixed with gas, escaped when pressure was applied around the opening, especially on the left side of the umbilicus. The free exit of the matter seemed also to be promoted, when the patient, as he was directed, lay, from time to time, on his face. On the 20th of December, the discharge had nearly ceased, wine and opium being still allowed with evident benefit; and in two days more he was able to sit up; his strength was improved, his night-sweats completely gone, and his

appetite good. This improvement was in part attributed to the use of an infusion of cascarrilla and decoction of chirayita (by the way a most excellent and agreeable bitter) which he had been taking for some days. On the night of the 25th, he again complained of pain in his bowels, which were rather costive, and for which he took a draught, containing Epsom salts, calcined magnesia, and rhubarb, to be repeated every two hours if necessary. When I visited him in the afternoon of the same day, I found that the medicine had not remained on his stomach, and he was suffering most acute agony from pain in the abdominal region, and he also complained of tenderness, on pressure, over the right hypochondriac region. Calomel, in three-grain doses, followed by half an ounce of castor oil, guarded with laudanum, was ordered. Hot fomentations were applied to the abdomen; leeches to the part where the greatest tenderness was manifest; and I further directed emollient injections, containing spirits of turpentine, to be administered, until the obstruction in the bowels should be overcome. On the following morning, although the pain was considerably abated, neither the medicines nor the injections, carefully repeated, had acted. I then ordered ten grains of grey powder to be made into two pills, with three drops of croton oil, and one given immediately, and the other, if necessary, in two hours; administering, at the same time, by Read's syringe, as much of a turpentine and warm water injection as the patient could bear, and which, when about three pints were thrown up, came away and brought off some scybalous and fæcal matter. The pain in the hypochondriac region, however, still continued; the pulse was 140, and all the symptoms most unpromising. December 27, pulse 144; *most profuse and uncontrollable stercoraceous vomiting had taken place; bowlsful of almost pure fæces being thrown up from time to time.* The turpentine injections were repeated at intervals, and calomel and opium given in a pill every four hours; and the vomiting gradually ceased in the course of the day, free action of the bowels having taken place. Hydrocyanic acid seemed to have no effect in tranquillizing the stomach. December 28, pulse 110. Repet. pilulæ et enemata. 29. Patient better, and had some sleep last night. H. S. habeat hyd. c. cretâ, gr. vj; pulv. opii, gr. ij; able to take a little gruel. 30. Pulse 94, strength improved, no return of the vomiting, pains in the abdominal region quite gone, slight discharge from the umbilicus, and frequent diarrhœa. Habeat misturam astringentem c. tincturâ opii, cujus capiat cochleare parvum post singulas sêdes liquidas.

The patient now went on favourably until the 6th of January in the present year, when he had some recurrence of the abdominal pains, with vomiting of greenish fluid. His bowels, notwithstanding every care to regulate them, having become again costive, he was directed to use castor oil and laudanum, and to repeat the injection. As I was confined to bed by indisposition, he was kindly visited for me, by my friend Dr. Filson, of Portaferry, who found the pulse to be 96; some discharge of matter, not fœtid, taking place from the umbilicus, and without any symptoms of hectic fever, or stercoraceous vomiting. The remedies employed had opened his bowels.

Jan. 8. As he still complained of pain, an anodyne draught was ordered by Dr. Filson, with good effect, and diarrhœa, with foul secre-

tions, having supervened, he also directed grey powder, with chalk and opium, to be taken three times a day, linseed poultices to be applied over the umbilicus, and the result of pressure effected by means of a bandage and graduated compresses, so as to direct the purulent discharge to the umbilical opening, tried; a measure which had also been previously suggested by Dr. Hunter. In about ten days more, the symptoms were in every respect much improved; but finding him still suffering from diarrhœa, I ordered compound powder of kino, and tincture of rhatany, with laudanum, which gradually brought his bowels into good order, interposing, at the same time, a teaspoonful of castor oil occasionally, when it seemed requisite.

Feb. 10. On visiting Smith this day, I found him able to sit up, his strength greatly improved, his bowels regular, no pain or uneasiness whatever, his pulse regular, the only remnant of his disease being a very slight occasional discharge of true non-fœtid pus from the opening at the umbilicus; so that after his long, varied, and severe sufferings, there is every reason to hope for his complete restoration to health, if no relapse should unfortunately recur. I should have observed, that after his last attack, on the 6th of January, the occurrence of pus in the stools led to the suspicion, that the abscess had effected a communication with the bowels, as well as with the exterior at the umbilicus.

REMARKS. This case, as far as my experience and reading extend, is quite unique. It is true, I find six instances recorded by M'Cormac (*Methodus Medendi*, p. 265), Blackall, Peter Frank, and Dugès, where a discharge of sero-purulent fluid, consequent on peritonitis, took place through the umbilicus, and in most of which recovery took place. Dalmás also mentions one case, where the evacuation took place through the intestinal canal, and Abercrombie another, where the point of exit was at the ring of the external oblique muscle. But the profuse hæmorrhages, the intolerably fœtid nature of the discharges, and the intense stercoraceous vomiting, seem peculiar to Smith's case; and, combined with the other varying and protracted symptoms, the disease having lasted, to the present time, for more than four months, form a combination of symptoms occurring in the same case, to which I am not aware of any parallel. The due observation of the phenomena, at the time of their occurrence, has led me to arrange them as occurring in the following order. Inflammation attacked the mucous and muscular tissue of the intestinal canal, and subsequently extended to the peritoneum. The sero-purulent effusion having got exit from the ulceration occurring at the umbilicus, a circumscribed abscess would appear to have been formed, from which the purulent matter, in the subsequent stages of the disease, appear to have been discharged; the hæmorrhage taking place, possibly by exhalation, as observed by Andral, but more probably from ulceration of some vessel; and the blood, not being entirely discharged at the opening, giving rise, by its stagnation and putrefaction in the abscess, to the most insupportably fœtid odour I ever remember to have perceived. The appearance of pus in the stools, in the latter stage of the disease, would, as already stated, lead to the inference that the abscess had also communicated with the alimentary canal. Although some congestion was observed in the liver, I do not think that the

abscess had any connexion with that viscus; and cases have been recorded by Abercrombie and others, where circumscribed purulent abscesses, supposed to exist in the liver, have, on dissection, been found to be totally unconnected with that organ.

In offering this explanation of the probable causes of the successive phenomena, I do it with the diffidence naturally inspired by all cases in any degree obscure, where no opportunity has arisen for elucidating them by a careful examination after death. At all events, the leading phenomena are faithfully recorded from notes made at the time; for being very much interested in the case, I visited the patient more than sixty times during its progress, and the reader has therefore an opportunity of explaining the symptoms in his own way. The recovery of this poor man, and his restoration to his wife and family, were greatly aided by a full supply of the necessary nourishment, placed at his disposal by the benevolence of a lady of rank in the neighbourhood.

Strangford, April 1850.

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REGULATIONS TO BE OBSERVED BY STUDENTS INTENDING TO QUALIFY THEMSELVES TO PRACTICE AS APOTHECARIES IN ENGLAND AND WALES. 1850.

AT the termination of the last century, and at the commencement of the present, the MEDICAL PROFESSION was in a most deplorable condition in this country; and the ailments of the great mass of the public were entrusted to the management of grossly ignorant, and uneducated practitioners. Of the number of those who professed to practise the art of medicine, the physicians alone were under the control of collegiate authority, and subject to professional examination. The rest were left entirely to their own tastes; some, more conscientious than their fellows, devoted themselves to the routine of lectures and hospital practice, and a few, fired with a praiseworthy ambition, actually presented themselves for examination at Surgeon's Hall—an ordeal, however, which, we are well assured, was by no means one of great severity. Under this system, a few great physicians and surgeons were undoubtedly produced; but their brilliant talents served only to show in darker colours the profound ignorance of their contemporaries.

In these circumstances, some honourable and high-minded individuals, lamenting the degraded condition of the science and practice of medicine, formed themselves into an association, the objects of which were to place the profession in a better and nobler position, to improve the individual standing of its members, and to secure efficient medical attendance for the middle and lower classes of society. These objects they pursued with unwearied perseverance, and amidst innumerable difficulties, owing chiefly to the opposition of the medical corporations, but partly to the apathy of the community. However, they finally succeeded in inducing the legislature to pass an Act, known as the Apothecaries' Act of 1815, by which Act, some of the objects in contemplation were attained; while others were frustrated by influences to which it is not necessary at present to advert. Such as it was, however, the Act passed both the Houses of Parliament, and received the Royal assent; and since that time, it has been the law of the land. It is hardly necessary perhaps to state that the powers, conferred by the Act, were successively offered to the Colleges of Physicians and Surgeons, and declined by both these bodies; they were at last offered to the Society of Apothecaries, and by them they were accepted. The Society were thereby empowered to appoint annually twelve examiners from their own members, whose duties were to consist in examining candidates for their certificate, and also to direct the course of study to be followed by the pupils. The Act moreover conferred upon the Society the power of prosecuting unqualified practitioners.

Since the Act of 1815, a great and striking change has been effected in the profession. The heterogeneous multitude who practise medicine, are now subjected to certain rules, are expected to attend lectures and clinical instruction, and are compelled, before entering into practice, to submit to an examination. This examination, which at first was imperfect and superficial, has gradually become more and more extensive and stringent, in proportion to the increased facilities offered to the student for the acquisition of medical knowledge. Hence has arisen a marked improvement in the *status* of the general practitioner. The knowledge of anatomy, physiology, chemistry, medicine, surgery, obstetrics, and pathology, has been widely diffused; and in every corner of the kingdom, in every provincial town, and even almost in every village, are to be found conscientious and scientific professors of the healing art in all its branches. The metropolis can no longer claim a monopoly of the talent of our profession.

The advantages which have accrued to the community, from this improvement in medical education, are incalculable; the middle and the lower classes (including the meanest pauper), who were formerly committed to the mercy of the charlatan or the druggist, or left to their fate, are now provided with competent medical attendance at a moderate, and, we regret to add, too often, a most inadequate remuneration. Nor have these advantages been confined to the general practitioners; for their elevation has given a vast stimulus to those who style themselves pure physicians and pure surgeons. The College of Physicians have relaxed many of their former vexatious restrictions, and have thrown open their doors to all *bonâ fide* graduates, and to others who are not graduates, if they can pass the very efficient examination which, of late years, has been instituted: the College of Surgeons have gradually improved the curriculum of education required of their students, and have instituted examinations, which, though lax and defective, are much more efficient than in former years. The just celebrity of the University of London, although little more than ten years have elapsed since its foundation, already sheds lustre upon the British metropolis; and among its graduates we could point to the best hopes of our profession.

We by no means assert, that all these beneficial changes have resulted from the Act of 1815; much is no doubt due to the spirit of the age, rousing the torpor, and infusing a more generous feeling into the Colleges. But it is certain, that the improvement of the general practitioner is clearly to be attributed to the operation of that Act of Parliament, imperfect and faulty as it undoubtedly is.

Such being the changes which have been effected in the constitution of the medical profession during the first half of the present century, it was with no small degree of amazement that we heard Mr. SKEY, the Hunterian orator for 1850, gravely and emphatically declare that the profession of medicine, at the present day, is "a degenerate pursuit!" He appears himself to feel that the use of such a phrase is open to criticism and liable to objection, and he, therefore, in his preface, proceeds to justify it in the following terms. "In justification of the term 'degenerate,' I would urge on the recollection of the reader, the condition of the profession at the latter end of the seventeenth century. At that time, the physician monopolized the entire rank and name of the practitioner of medicine:—the surgeon was a mere operative, identified with a menial trade; and the apothecary a drug-vender, having, like the surgeon, no claims to medical knowledge, *quoad* the treatment of disease, as may be inferred from the following lines of Dryden:

'Physicians from the tree have found the bark;
They labouring for relief of human kind,
With sharpened sight some remedies may find,
The apothecary-train are wholly blind.'

In the present day; the physician no longer monopolizes "the entire rank and name of the practitioner of medicine," but shares that rank with a multitude of others, who are not physicians; the surgeon is no longer "a mere operative, identified with a menial trade," but is an educated gentleman, and a member of a Royal College; the "apothecary-train" are no longer "wholly blind," but have their eyes pretty widely open: THEREFORE, (says Mr. Skey triumphantly), "am I not justified in assuming that, taking our profession as a whole, the entire body is *degenerate* from its former eminence?"

Is Mr. Skey serious in penning the above lines? For if so, he must surely leave it to be inferred, that if the apothecaries of the present day were again to be reduced to the condition of "drug-venders having no knowledge of disease"; if the members of the Royal College of Surgeons were again to be reduced to the rank and to the employment of barbers; and if the bag-wig and the gold-headed cane of the physician were again to be considered as the symbols of the concentrated medical knowledge of the empire—then the dream

of his Hunterian Oration, concerning the degeneration of the medical profession, would be abundantly realized.

Having pronounced the profession of medicine to be a degenerate pursuit in the present day, Mr. Skey proceeds to point out the causes of its decline, and of the low estimation in which it is held by the community. He begins by declaring, that "by far the greatest of all the difficulties under which the profession of medicine labours, may be referred to the WANT OF EDUCATION;" and he proceeds to show, in very eloquent and appropriate language, the great benefits of literary and scientific attainments in those who are intended for the medical profession; and then he goes on to state his opinion, that "the almost universal neglect of these pursuits in early life, and the want of cultivation, both of philosophy and general science, are among the chief causes by which medicine is degraded in the present day." In these remarks we most heartily concur with Mr. Skey; and we also coincide with him, in thinking that some form of preliminary knowledge should be rendered compulsory on those who are destined to become members of the medical profession. But the language of Mr. Skey on this point, really conveys the most bitter reproof against the governing body of his own College; for, with the full power of demanding at least some evidence of preliminary knowledge from the candidates for their diploma, they have uniformly neglected to do so; and the only evidence of Latinity which is required at the College, from their alumni, is a very superficial and imperfect examination in that language, in the case of the few students who are articled at the College. For fifty years, the College has shown itself wholly indifferent to the preliminary education of its members; and it is a notorious fact, that the most idle and ignorant students invariably prefer trying their chance at the College to attempting any other examination; because, among other reasons, they escape the Latin at the former place. We are credibly informed, that many of the members of the College of Surgeons are rejected by the "apothecary-train," at Blackfriars, for gross ignorance of the very rudiments of the Latin language. But we are doing injustice to the Royal College of Surgeons; the Council of that learned body have suddenly awoke from their mesmeric sleep, and have lately startled the world by demanding from the candidates for their fellowship, not only a knowledge of the Latin language, but also of the Greek, German, and French, together with mathematics, optics, and hydrostatics! As this is a step in the right direction, we are by no means disposed to find fault with it; on the contrary, we most highly approve it, and we only regret, in Mr. Skey's own words, "that this important requisition is not made referable to the *first*, rather than to the *last* stage in the career of the student." We would ask in addition, why, if classical, and mathematical, and philosophical, and philological knowledge are so necessary and so desirable, (as they undoubtedly are), in the *Fellow* of the Royal College of Surgeons, are they so utterly valueless in the *Member*? Why is the Member to be encouraged in his utter contempt for the mere elements of Latin grammar, while the Fellow is to translate Greek and Latin into English, and English back again into Latin and Greek, and is to be conversant, moreover, with the modern languages, and with mathematics, and natural philosophy? IS IT BECAUSE THE COUNCIL OF THE COLLEGE DESIRES TO FIX A BRAND OF DEGRADATION UPON THEIR MEMBERS, WHO FORM BY FAR THE GREATEST NUMBER OF THEIR BODY, AND CONTRIBUTE MOST LARGELY TO THEIR FUNDS; AND THUS TO SECURE, AS FAR AS POSSIBLE, A MARKED INFERIORITY—IN FACT, THAT DEGENERACY WHICH THE ORATOR SO ELOQUENTLY DENOUNCES?

The next important point to which Mr. Skey alludes, is the system of APPRENTICESHIP, which, according to him, is "little more or less than an ingenious device by which to exhaust or render nugatory, four or more invaluable years of the early life of the student." "During these four or more years, the so-called student is compelled to practise the art of manipulation, which consists in the wielding the important instruments placed at his command;

while he holds converse with the languages of the philosophers and orators of the past world, in a refined Latinity obtained from his master's day-book." "To this disgraceful system of officinal drudgery, the medical profession has lent itself in direct contravention of the laws of moral right, of reason, and of common sense"; and he continues: "I ask you whether the rooted injury thus perpetrated by *four or more long years of personal servitude*, in which the only distinction discoverable between his lot and that of an ordinary servant, consists in the fact, that he is made *the purchaser of his own degradation*, does not inflict a wrong on the mind and habits of a youth, which, in a very large majority of cases, no future opportunities of study, no future discipline, can redress or justify." Upon these passages, we shall remark in the first place, that the whole of them are gross exaggerations, while some of the statements are positively erroneous; but we are saved the trouble of many remarks upon this subject, by simply quoting the following lines from the regulations of the Court of Examiners of the Society of Apothecaries, published in 1835, and which have now, therefore, been in the hands of the profession for *fifteen years*.

"The legislature having made an apprenticeship of five years imperative upon all students, and having permitted them to present themselves for examination at the age of twenty-one, obviously intended that the greater part of their medical education should be included within that period; and the Court have great pleasure in stating that, in very many instances, students have actually completed their course of study, and have been admitted to examination, *within a few weeks after the termination of their apprenticeship*. It is, however, to be regretted, that this advantage has been frequently lost sight of, and that a great proportion of this valuable time, and not unfrequently the whole of it, has been passed exclusively in practical pharmacy. The Court are desirous of impressing upon parents the necessity of *preventing this waste of time*, by making such arrangements with practitioners, with whom they place their sons, *as may enable the young men to commence their attendance upon lectures in the course of the third year of their apprenticeship*."

Such are the recommendations issued by the Society of Apothecaries, with whom rests the administration of the Act of 1815: with these recommendations, the professors and teachers of the medical schools, and the pupils themselves, are all thoroughly acquainted. Mr. Skey, as an Hospital-Surgeon and a Professor, knows, perfectly well, that hundreds of students annually present themselves at the College of Surgeons and at Apothecaries' Hall for examination at the age of twenty-one, having completed the whole of their studies (including three years, and often more, of attendance upon lectures and hospital practice); nevertheless, in the year 1850, Mr. Skey declares that the "so-called student *is compelled* to practise the art of manipulation for four or more years;" that "a rooted injury is perpetrated by four or more long years of *personal servitude*;" and that the profession has "lent itself to this disgraceful system of *officinal drudgery*."

Now, as we are as much opposed as Mr. Skey can be, to any system of personal servitude, or of officinal drudgery, which we are convinced was never either contemplated by the legislature or sanctioned by the profession, we are happy to quote the following passages from the *Preface to the Regulations of the Court of Examiners of the Society of Apothecaries for the year 1850*, which sentences place the matter in question in a still stronger light.—"The Court of Examiners have always regarded the term of apprenticeship required by the Act of Parliament of 1815, *as a period of study*, to be employed by the pupil, under the superintendence of a practitioner, *not merely in dispensing medicines*, but also *in attendance upon lectures and hospital practice*: and they have felt justified, after careful consideration of the clause in the Act relating to apprentices, in giving to it this enlarged and liberal interpretation. In repeating their opinion at the present opportunity, they are induced to hope that parents, in selecting the practitioners with whom they

place their sons, and in the arrangements made between them, will bear in recollection, that *the Court do not require a servitude of five years to practical pharmacy*; but that they recommend *every possible opportunity to be afforded to the pupils for their moral, intellectual, and professional advancement.*"

It is not our intention to enter into any defence of the system of apprenticeship; it appears that the clause in the Act relating to apprentices, was introduced by the House of Lords during the passage of the Bill through the different branches of the legislature, and that it was not solicited or recommended by any of the parties who were anxious for the success of the measure. But we cannot help remarking, that it appears to us, that the evils of this system have been grossly exaggerated; and while we willingly admit that an extensive course of collegiate education in classics and mathematics, followed by a strictly medical education extended over many years, is far better than any apprenticeship: yet, as such a course of study is incompatible with the means and the expectations of the great bulk of medical students, we do not regard the present system with such utter abhorrence as some of our contemporaries. Nay, we may go a little farther, and may agree, that if the pupil, at the commencement of his career, is "compelled" for a year or two, "to wield the important instruments placed at his command," by which, we apprehend, is meant the art of compounding medicines, together, probably, with learning how to bleed, draw teeth, dress wounds, apply bandages, read prescriptions, etc., we cannot conceive that the pupil will make a worse practitioner in after-life. We know, and could point out instances, where persons, in the highest rank of the profession, have made the grossest mistakes from the want of knowledge of the rudiments of pharmacy; and we therefore think it desirable, even in cases where no apprenticeship exists, that the pupils should "wield," for a short time, the implements which, if he does not use them himself, he is afterwards to recommend in the treatment of disease. We cannot but remark, also, that where the pupil is diligent, and the master conscientious, the period of apprenticeship is not only passed without inconvenience, but is attended with positive advantage: for, in the familiar intercourse of domestic life, a vast mass of information may be conveyed to the pupil in the most pleasing form, and it would be a libel upon the general practitioners of this country, to maintain that many such conscientious instructors of youth are not to be found. If, indeed, parents are actuated merely with a view to pecuniary saving, and bind their sons to the lowest members of the profession, on the distinct understanding that the pupils are to work in proportion to the smallness of the premium, we cannot see that any parties have a right to complain; and if such pupils do spend four or more years in personal servitude, we have no sympathy for them, and leave them to the compassion of the Hunterian Orator.

Another remarkable feature in the Hunterian Oration, is AN ATTACK UPON THE GENERAL PRACTITIONERS of this country. "The general practitioner", says Mr. Skey, "is an amphibious link between a profession and a trade. . . . He is permitted a remunerative profit on the materials of his druggist, on the mechanical agents of treatment, not on the exercise of the judgment that selects them. For his loss of time, or his knowledge, however superior to others, he attains no certain compensation. . . . I do not hesitate to assert, that it is impossible, in many cases, for the medical attendant to be remunerated, but by the resort to means, which high principle must proclaim in his own breast to be indirect, and even disingenuous." Now, like many other portions of Mr. Skey's oration, a great part of his remarks upon the state of general practice in England may be set down to exaggeration, and some to misrepresentation; and it must be observed throughout, that he is fond of representing the errors and defects of any given system, as forming its intrinsic essence. Thus, because among those who are styled general practitioners, some do, and some do not dispense their own medicines, and a third class adopt a plan (which we greatly disapprove) of charging so much for the medicines they

supply ; “ *therefore*,” says Mr. Skey, “ the general practitioner is an amphibious link between a profession and a trade.” But we must examine Mr. Skey’s statements rather more closely. “ If,” says he, “ the law award payment for physic only, *of necessity* the medical attendant disposes of as large a quantity as is compatible with the digestive capabilities of the patient.” No doubt “ if the law award payment for physic only,” *then* the practitioner is tempted to send as much medicine as his patient’s stomach and pocket can bear ; but the law does no such thing ; and it has been decided over and over again in the courts of justice, that a medical man may obtain compensation for his professional services, independently of his drugs ; and we really cannot help expressing our amazement that Mr. Skey should venture upon an assertion which has not the slightest foundation. We thus proceed to demolish, by argument, the whole structure of Mr. Skey’s denunciation of general practice. “ If,” say we, “ the law affords compensation for medical services independently of drugs, as it undoubtedly does, then the practitioner need not consult the digestive capabilities of his patients as to the amount of physic they are able to swallow ; *therefore*, he may claim a compensation for his medical services independently of drugs, and, *therefore*, (as trade consists in the mere selling and buying of commodities), the general practitioner is not necessarily an amphibious link between a profession and a trade.” It is very far from our intention to defend the sale of drugs by the members of a learned profession ; we confess to a feeling of abhorrence at seeing (as we have seen), the diploma of the College of Surgeons of England, placed in a shop-window in juxtaposition with lozenges, barley-sugar, soap, perfumery, and antibilious pills ; but we cannot view in the same light, the custom prevailing among many medical men, of providing the necessary medicines for their patients, and charging for their attendance ; and we believe that such is the practice of many of the most respectable members of the medical profession in this country. Employed in this manner, medicines are nothing more nor less than the instruments in the hands of the practitioner, and he is no more to be blamed and insulted for employing his calomel pill or his opiate draught, than Mr. Skey, the pure surgeon, is to be ridiculed and abused for using his catheter, splints, or lancet : in neither case does the party claim remuneration for the instruments used, but for the skill required in using them.

Without entering into any elaborate defence of general practice, it may be safely argued, that it is very well adapted for the wants of the great bulk of the community. In the metropolis, and a few other places, where wealth is abundant and talent diversified, a division of labour commands a sufficient remuneration, and finds ample scope for exertion. The Countess of A., or Mrs. B., the city millionaire’s wife, has a physician for one complaint, a surgeon for another, a physician-accoucheur for a third, and an apothecary, probably, provides the medicines and attends the children and the servants. But how is this possible for a person in ordinary circumstances, and, *à fortiori*—how impracticable for the lower classes ? It is, therefore, absolutely necessary, that, to supply the wants of the middle and lower classes in the metropolis, and of nearly all ranks in the provincial towns and villages, there should exist a branch of the profession, the members of which must be generally competent to undertake the management of all diseases. Whether this branch of the profession do, or do not supply their patients with medicines, is, in our opinion, quite immaterial. If any practitioner inundate his patient’s house with draughts and mixtures, it is quite competent for the patient—nay, it is his duty,—to dismiss the “ amphibious” gentleman, and avail himself of the services of another who adopts an opposite system ; but that the mere fact of a patient being supplied by his medical attendant with the necessary medicine, should subject the practitioner to be insulted and reviled, spoken scornfully of as a peddling tradesman, and almost accused of dishonesty, appears to us to be as monstrous, as it is a ridiculous perversion of common sense. In some cases, it is highly necessary and desirable, that the medicines

should be supplied by the medical attendant ; where, for instance, very active drugs are employed, their preparation and composition should be superintended by a man possessing some scientific knowledge. Again, in many situations, as in country villages, or at sea, in military practice, or in the colonies, the medical practitioner *must*, in nine out of ten cases, be the dispenser of his own medicines ; and why this circumstance, *per se*, should fix the brand of unprofessional conduct or of inferiority, on the character of a medical man, we are wholly at a loss to conceive ; and, therefore, we emphatically deny.

If Mr. Skey had availed himself of the opportunity afforded him of recommending the discontinuance of *the system of charging for drugs*, he would have done no more than his duty ; but, as he has taken advantage of his position to indulge in an indiscriminate and ill-timed attack upon general practice, we cannot wonder that he has drawn upon himself the just indignation of a most meritorious, a most ill-used, and a most ill-paid, and, as yet, unprotected class of his profession.

At the commencement of page 32, Mr. Skey declaims as follows : " I conceive that so long as the general practitioner consents to subject his professional practice to such degrading conditions, he is unworthy the rank and estimate of a professional man. Medicines should be dispensed at their real, not their adventitious value. With one voice, this department of the whole profession should cry aloud, and claim their indisputable right to repudiate a practice so vicious, both as regards their own high claims, and their utility to others ; and obtain from Parliament the title to a remuneration, more consistent with the real services they have rendered, and less derogatory to the repute of the high profession to which they belong." Now, as a piece of rhetorical flourish, this is all very well ; but what are the " degrading conditions" to which the practitioner is obliged to submit ? We have already shewn that the dispensing of medicines is purely a matter of convenience and of private arrangement, and that no practitioner need do so, unless he choose, as the law allows him to claim compensation for his services, either with or without medicines. But general practitioners are to " cry aloud" and " obtain from Parliament the title to a remuneration more consistent," etc. What are the general practitioners to " cry aloud" for ? and what are they to expect to obtain from Parliament ? There is no occasion to cry aloud for a title to a remuneration which the law already allows them ! But is it intended that Parliament is forcibly to separate the supply of drugs from the practice of physic, to abolish dispensing on the part of the practitioner, and throw it entirely into the hands of the druggist ?¹ If this be done, we are then tempted to ask, moreover, whether it is intended that Parliament is to arrange a tariff of fees for the payment of the practitioner ? and on what principle this tariff of fees is to be arranged ? whether, as in the case of solicitors, all persons, whether peers, judges, merchants, tradesmen, servants, or labourers, are to be equally charged six shillings and eight-pence a visit ? or whether the fee is to be regulated according to the rank, or station, or wealth, or poverty of the patient ? or according to the rank or the abilities of the practitioner ?

In France, and in Scotland, where the dispensing of drugs is principally

¹ The druggist, be it remembered, generally prescribes medicines to all who come with ready money, too often strives to injure practitioners who supply medicine to their patients, and patronizes others who send prescriptions to his shop. The chief business of the petty druggists is prescribing. We find the following *morceau* in the Registrar-General's Report for the week ending Saturday, April 20, 1850. " In Charing Cross sub-district, at 22, Salisbury Street, a gentlewoman, aged 37 years, died of 'aneurism, and extensive disease of the aorta, spasmodic collapse (thirty-five minutes). *Post-mort.*' Mr. Leonard states, that 'the deceased retired to bed, having previously taken a draught, made up by a chemist, on the verbal report of her servant ; was seized with vomiting and violent pains in the bowels, and soon died, exclaiming, 'Am I poisoned ?' just before death."

in the hands of the druggists, is the emolument or social rank of the profession higher than in England?

We leave these questions for Mr. Skey's meditation; and, in the mean time, we may as well express our opinion, that the remuneration of the medical profession must, after all, for the most part, be a matter of arrangement between the patient and his medical attendant, and must depend upon conventional usages, upon the circumstances of the times, and upon the mutual honour of the parties.

One word more, and we have done with the Hunterian Oration. There is in this composition, amidst a great quantity of clap-trap, some really good writing, and it also contains sentiments in which every upright medical practitioner must cordially concur. Yet we cannot but express our regret, that Mr. Skey did not submit his manuscript, before its publication, to the pruning-knife of a judicious friend, acquainted with the present transition-state of medical practice,—a course which might have prevented him from offering much unprovoked insult, and from making many erroneous statements, calculated to exasperate the great body of his brethren, and to unjustly lower them in public estimation.

THE REGULATIONS OF THE COURT OF EXAMINERS OF THE SOCIETY OF APOTHECARIES for 1850, form a very important, although a very unpretending, production. The Society of Apothecaries possess no *prestige* to render themselves attractive to the medical public; they have silently and unostentatiously performed, for upwards of thirty-five years, the duties delegated to them by the Legislature in 1815. They have done more to elevate the tone of medical education than any of the Colleges; and until some better system, or one as good, be generally adopted and sanctioned by the Legislature, it is to be hoped that they will be encouraged in their laudable efforts to maintain the high standard of medical education which they have endeavoured to establish. We are by no means disposed to pass an unqualified eulogium on the Society of Apothecaries; but we must, in common justice, offer a few remarks which may, perhaps, remove some very erroneous impressions entertained in respect to the Society. In the first place, the Society, it appears, derive no benefit whatever from exercising the Act of Parliament, beyond the power of electing the Examiners; and it is therefore evident that, whether they retain their privileges or abandon them, they can have no interested views in the result. The Examiners are chosen from the members of the Society, and must be practitioners of ten years' standing; they are not chosen by seniority, but are *selected* on account of their talents, and are liable to removal from time to time. Now nothing can be fairer than such a system, for the Examiners are neither self-elected nor irresponsible; and the only question is, whether the system has been fairly worked out. It has been objected to the composition of this Court, that its members are undistinguished in the eyes of the medical profession; and this objection would have more weight were it not known that, by a bye-law of the Society, "no Member of the Court of Examiners will be recognized as a Teacher on any branch of Medical Science". However competent, therefore, a man may be as a lecturer, he is utterly forbidden to exercise his talents so long as he remains in the Court of Examiners; and hence, as Hospital Surgeons or Physicians, or as Lecturers or Professors, the members of the Court of Examiners never *can* become known to the profession. But by this regulation, the Court of Examiners are placed in a position of great independence, and their integrity must be unquestionable; for, as they have no personal interest either in the schools or in the pupils, they are able to perform their duties to all, without favour or affection to any. The "Regulations" which they have lately published, afford, we think, a convincing proof of the soundness of their views and the correctness of their intentions.

Desirous of elevating the character of the medical student, they urge most

strongly the great importance of preliminary knowledge, and they lay much stress upon the lamentable fact, that a great number of the rejections which take place, are owing to a total ignorance of the Latin language. They then proceed to state: "In accordance with recommendations, published many years since, the Court consider that the pupil, *before he enters upon his medical studies*, should possess a competent knowledge of the classics, so as to be able to translate any easy Greek or Latin author; and that he should also be acquainted with the elements of mathematics and of natural philosophy, and should acquire one or more of the modern languages—French, German, or Italian."

On referring to copies of former regulations, issued by the Court, we find sentiments expressed of a precisely similar nature. In page 3, of the Regulations of 1830, the Court "beg seriously to impress upon parents and guardians, who destine the youth, under their care, to the study of medicine, that a *familiar* acquaintance with the Latin language is indispensable, and that a knowledge of Greek is scarcely less so"; and they also recommend their pupils to study natural history, and the *exact* sciences. In 1832, they recommend a familiar knowledge of Latin and Greek, together with an acquaintance with the mathematical sciences, and with the French and German languages. These recommendations are repeated in all the subsequent regulations. But the Court have not been satisfied with merely *recommending* this preliminary knowledge: in the case of the Latin language, they have systematically *enforced* it, as is proved by the number of rejections which have taken place, solely for ignorance of Latin.

We have, lying before us, a copy of the regulations, dated July 31, 1815, wherein the candidate for examination is required to possess a competent knowledge of the Latin language, and to evince it by translating parts of the *Pharmacopœia Londinensis*, and physicians' prescriptions. In 1827, the candidate for examination is required "to translate, *grammatically*, parts of the *Pharmacopœia Londinensis* and physicians' prescriptions", and "should any doubt arise as to the candidate's possessing a competent knowledge of Latin, he will be required to translate a passage or passages from some one of the easier Latin authors." In 1830, the candidate is required to translate parts of *Celsus de Medicinâ*, or *Gregory's Conspectus Medicinæ Theoreticæ*, in addition to the *Pharmacopœia Londinensis*, and physicians' prescriptions; and in 1850, they have recurred to a plan which they originated, we believe, in 1839, of volunteering to institute a separate Latin examination on a day distinct from that of the general examination; a plan which has the two-fold object of relieving the student from the Latin test at an early period of his medical studies, and of ascertaining carefully that he understands not only the mode of translating the language, but also its grammatical construction.

In this conflict with the powers of darkness, the Court of Examiners, so far as England is concerned,¹ have fought the battle single-handed. The College of Surgeons, the only other corporation with which the general practitioners, as a body, are in any way connected, have never considered it worth their while to urge on their candidates the importance of the Latin, or any other language; indeed, the only opportunities that the general practitioners enjoy, of knowing that any branch of human science is expected of them by the College, except anatomy and surgery, are when they are called together to be abused and ridiculed by the Hunterian Orators, for not knowing what the College never required them to learn.

In that part of the Regulations of the Court of Examiners of the Apothecaries' Society, which refers to purely medical subjects, the object seems to be to direct the attention of the students to practical science; and we perceive, with great pleasure, two or three very important alterations in their present

¹ The College of Surgeons of Edinburgh are deserving of the highest praise for what they have done to elevate the tone of the preliminary and professional studies of their students.

regulations as compared with those issued in former years. In the first place, we perceive that the subject of practical chemistry is now brought prominently forward; and this regulation, which enforces upon each student a course of distinct chemical manipulations performed by himself, in addition to the mere attendance on the systematic course, must tend most materially to impress the facts of this most important and most delightful science upon the minds of the pupils. It can never be too strongly urged upon the attention of medical students, that the science of medicine is not only one of theory, but also one of observation and experience; and that those things which are *seen* and *felt*, make far more impression than those which are merely *heard* from the lecture-table.

“Segniùs irritant animos demissa per aures,
Quàm quæ sunt oculis subjectà fidelibus.”

Believing, therefore, as we do, that chemistry is equally important with anatomy, and that they form, together, the basis of scientific medicine, we hail with great pleasure the prominent place which chemistry is now made to occupy, as a practical pursuit.

The next subject to which we may advert, is of still greater importance; and this is the direct encouragement now given to the STUDY OF CLINICAL MEDICINE, which stands in the same relation to the theory and practice of medicine, as practical chemistry does to the systematic lectures on that subject. It is notorious that hitherto clinical teaching has been most grossly neglected in the metropolis, notwithstanding the abundant opportunities afforded for its cultivation, by our splendid and richly endowed hospitals; and the consequence has been, that the best of our students have been in the habit of resorting to Edinburgh or to Paris, for that instruction which they have been unable to obtain in London. There can be no doubt that a course of systematic lectures on medicine is highly important to the student in paving the way for his practising, in future, with safety and advantage; but it is equally important, that he should verify, by the evidence of his own senses of sight and touch, at the bed-side, and in the anatomical inspection-room, the facts or doctrines which have been enunciated in the lecture-hall. Students have been compelled to attend too many lectures, and, amidst the multiplicity of oral discourses, have too generally neglected that *practical* study to which the lectures merely form the introduction. But on this point we cannot do better than quote the following passage from the regulations. “The Court would also invite the student to test, by his own experience, and the exercise of his reasoning powers, the truth of the facts and theories which are offered to his notice. While, therefore, they strenuously urge a diligent attendance upon the various lectures delivered by the teachers, and a careful study of the works recommended by them, they would as strongly recommend an unremitting devotion to the practical duties of the hospital, the dead-house, the chemical laboratory, and the dissecting-room.”

The Court appear to be dissatisfied with the present system of teaching at the medical schools, and we confess that we do not wonder at their dissatisfaction. Teaching is too often undertaken, not for the purpose of instructing the student, but in order to bring the teacher into public notice. Hence, the lecturers are by no means sufficiently impressed, that the duty devolves upon them, not merely of *delivering* their lectures, but of ascertaining afterwards, by oral examination, whether the student has understood their import. The Court, therefore, strongly recommend that a friendly and cordial feeling should be cherished between the teachers and the pupils, and that the former should subject their classes repeatedly to catechetical instruction, conveyed by questions and answers; a plan which, if generally adopted, would, in their opinion (and also we may add, in ours), contribute very materially to obviate the practice of *grinding*, by doing away with its necessity. The custom of *grinding*, in fact, is a necessary evil, resulting from the laxity of the teachers, who, if they cannot perform their duties themselves, should delegate their performance to others. In short, let the grinders be recog-

nized as auxiliary teachers at the medical schools. Thus, a system would be established similar to that of private tuition at Oxford and Cambridge,—a system, which has never, so far as we know, produced any prejudicial result either to the attainments of the pupils or the reputation of the Universities.

Whatever objections may be raised to particular portions of the "Regulations", they are evidently dictated by a sincere desire to improve the *status* and increase the usefulness of the General Practitioners. As the Court of Examiners are, for reasons above stated, quite above the suspicion of interested motives, we feel bound to accord them our hearty meed of approbation, and to thank them, on behalf of the profession and of the whole community, for their earnest endeavours, under many discouragements, to elevate the character of that class of medical practitioners to whose charge is committed the entire pauper population, and a majority of all classes of society.

A TREATISE ON DISEASES OF THE BONES. By EDWARD STANLEY, F.R.C.S., President of the Royal College of Surgeons of England, and Surgeon to St. Bartholomew's Hospital. Post 8vo. pp. 367. London: 1849.

If a man steadily apply his powers of observation during a long period, to any subject, he cannot fail to be rewarded for his diligence, by gaining an amount of knowledge beyond his fellows. Such is the case in the present instance. Mr. STANLEY has for many years been investigating the diseases of the osseous structures, with all the advantages which a command of the wards of the largest hospital in London, and an unlimited admission to anatomical collections, public and private, could afford. For more than ten years has the book been expected; but the delay in its appearance is by no means to be regretted, for it has enabled the author to avail himself of recent pathological and microscopical discoveries, which have been neither few nor unimportant.

HYPERTROPHY AND ATROPHY OF BONE are first considered. The former disease is most frequent in the bones of the face, and is familiar to most surgeons who have the opportunity of observing hospital practice. When Hypertrophy occurs in the long Bones, it may cause increase in length as well as in bulk, giving rise to inequality between the limbs, and much inconvenience. Atrophy, on the other hand, may arrest the development of Bones, and cause a shortened limb. A very remarkable case is mentioned, in which the growth of the lower jaw was arrested in a child at the age of two years, causing, in after-life, a singular deformity. As regards treatment, but little can be done in these cases.

NEURALGIA OF BONE, is a term applied by Mr. Stanley to a painful condition of these structures, which, we suspect, comes under the class of hysterical affections. Three cases are mentioned,—all of females under thirty, and the general symptoms are those characteristic of hysteria. In one, amputation was performed; but with the exception of certain dark patches, resembling ecchymoses, in the cancellous structure of the condyles of the femur, nothing abnormal was found.

INFLAMMATION OF BONE. Enlargement of Bone is the general effect of Inflammation of its tissues; but its characters vary with the circumstances giving rise to the inflammation. It may be accompanied by expansion or induration of the Bone, or by osseous deposits on its surface; and, according to recent observation, expansion of tissue is one of the most frequent alterations to which it is liable. The result is softening of the bone by separation of the walls of the cells and widening of their interstices. Mr. Stanley believes that a bone, once so enlarged, will permanently remain so. Another change is, that after the separation and widening have taken place, the lamellæ become thickened, hardened, and consolidated—producing induration of the tissue; the solidity being due to the formation of concentric osseous laminae

upon the insides of the Haversian canals, narrowing some, and obliterating others. Accordingly, indurated Bone is less vascular and oily than healthy Bone, and sometimes acquires the colour, as well as the compactness and weight of ivory.

No structure of the body surpasses bone in the perfection with which it exemplifies the singular law of symmetry of disease. The two sides of the pelvis will present changes, the very counterpart of each other. The long bone will enlarge equally, and present evidence of morbid action identical in every hollow, ridge, and swelling; and from no disease are such results so frequent as from rheumatic inflammation. On such enlarged and indurated bones, medicines have no effect: the unhappy subjects are doomed to drag about with them, for the remainder of their days, the heavy and misshapen limbs:—

“*Monstrum horrendum, informe, ingens!*”

Mr. Quekett has observed, that with induration of the articular ends of bones, their surfaces, when deprived of cartilage, become smooth and polished with a porcellaneous appearance, from the blocking up of the Haversian canals with earthy substance.

SUPPURATION IN BONE is of two kinds, circumscribed and diffused. The latter is a very formidable disease, causing great constitutional disturbance, and much local mischief, as proved by several cases related. The circumscribed suppuration is less formidable; but its diagnosis is of importance, as it may be confounded with simple inflammation, and also with the neuralgic or hysterical affection before alluded to. As regards the treatment of Suppuration in Bone, there is nothing deserving of special mention for its novelty, although the rules laid down are excellent.

CARIES. By Caries, Mr. Stanley designates those changes which, under certain circumstances, are consequent on chronic suppuration in the cancellous texture of Bone. He distinguishes the simple, scrofulous, syphilitic, and phagædenic varieties. The following is the description of the phenomena attendant on the progress of Caries. “Inflammation extends from the bone to its investing soft parts, which become swollen, thickened, and tender, and abscesses are formed in them which contract into fistulous passages, leading to the diseased bone. The periosteum covering the diseased bone becomes thickened, very vascular, and readily separable from it. The bone itself is at first very vascular, then its cells become filled with a reddish brown fluid, apparently a mixture of blood and pus, and occasionally combined with oily particles. Absorption of the bone, but chiefly of its animal part, ensues; that which remains is porous and fragile, and of a grey brown or black colour, probably from decomposition of the matter within its cells; to which cause likewise, the foetid odour of the matter discharged through the fistulous passage may be ascribed. The diseased bone may gradually disappear, either by ulceration, or by its discharge in fragments through the fistulous passages in the surrounding soft parts. Ulceration in some instances commences within the bone, hollowing it out and reducing it to a thin shell; in others, ulceration commences in the outer surface of the bone and extends progressively inwards. Whilst these changes are in progress, granulations, very loose and spongy, and bleeding on the slightest touch, often arise from the diseased bone, filling the cavities in its interior, and protruding through the fistulous passages in the soft parts covering it.” (p. 52.)

With respect to the treatment of Caries, incisions through the soft parts to let out the matter, and soothing applications, are chiefly recommended. Operative measures are to be resorted to with caution, but great stress is laid on absolute quietude of the limb. In certain cases, the iodide of potassium is of great service, by arresting the inflammation of the periosteum covering the diseased bone.

ULCERATION OF BONE. On this, valuable remarks are made; and the fol-

lowing points of diagnosis may be advantageously borne in mind. "The Ulceration of Bone, which is the effect of single inflammation in its tissue, usually begins at a simple point, and spreads equally in width and depth. When, however, the ulceration is consequent on inflammation of the periosteum, it spreads widely over the surface of the bone, but does not in general deeply penetrate its substance. Syphilitic ulceration usually begins at many points, distinct yet close together, giving to the appearance of the bone a worm-eaten appearance. Malignant Ulceration of Bone is generally irregular in its outline and surface; and it extends in a manner to form excavations in the bone of unequal length, width, and depth, with sharp over-hanging margins" (p. 60.) Ulceration of Bone is sometimes a distinct and primary disease; and as such, attacks the head of the femur but capriciously. It only occurs in adults, and always in males, being often traceable to local injury and to rheumatism. The chief symptoms are, weakness and uncasiness, scarcely amounting to pain in the hip joint; its progress is exceedingly slow, but it eventually destroys part of the head of the femur.

The observation that reproduction of the compact substance of Bone removed by ulceration never occurs, is, we believe, due to Mr. Stanley, and was made by him many years ago. In cases where there appears to be reproduction, dense fibro-cellular tissue—not bone—is the new formation.

NECROSIS. To this a considerable space is devoted, and it is well worthy of careful perusal. Necrosis usually attacks the compact tissue of bone, and the tibia is most frequently its seat. Next in frequency ranks the femur, and the lower jaw is often subject to it. One of the latest observations on the subject is, that the manufacture of lucifer matches is very apt to give rise to Necrosis of the jaw-bones, probably from the phosphorous acid vapour given off. The precise *modus operandi* is not yet positively known, although the probable explanation is, that the fumes of the acid give rise to inflammation of the periosteum of the jaw, the general health being at the same time greatly depraved. The phenomena of exfoliation have been greatly elucidated within the last few years by the labours of Professor Goodsir, Mr. Bransby Cooper, and Mr. Gulliver,—although it is but justice to John Hunter to state, that the accuracy of his views has been strikingly confirmed by the light thrown on the subject by these able microscopists and observers. The Haversian canals which immediately bound the dead, or dying bone, are enlarged contemporaneously with the filling of their cavities with a cellular growth. As this proceeds, contiguous canals are thrown into one another; and at last the dead, or dying bone is connected to the living by the cellular mass alone. It is now loose, and has become so in consequence of the cellular layer which surrounds it, presenting a free surface and throwing off pus. Mr. B. Cooper has ascertained, that a large quantity of the solid constituents of bone are contained in the disease arising from diseased bone. We must pass over the mode by which the old bone is removed, and that by which its loss is repaired, and proceed to the treatment of Necrosis. As a general rule, soothing applications are the best; but it occasionally happens that a moderate stimulant is required, and when such is the case, Mr. Stanley recommends mercurial ointment mixed with soap cerate. The old practice of soaking necrosed bone with dilute mineral acids, to hasten its removal, is not approved; but, in some cases of superficial Necrosis, the application of potassa fusa or nitric acid, is admissible. In cases where the Necrosis is clearly superficial, and where the exfoliation is at a stand still, the removal of the dead bone by operation is expedient, and also in internal and deeply seated Necrosis, when the dead bone is ascertained to be loose.

When the shaft of a bone is necrosed and separated, its removal is advisable;—but in such operations, as little as possible of the walls of the new bone must be injured, as there will be no reproduction of it. The treatment of Necrosis of the Bone of a finger or toe, was, in former times, to amputate it; but modern experience has shown that all that is necessary, is to divide the

soft parts covering the dead bone sufficiently to permit its extraction. The finger will be shortened, but still its form will be retained, and it will be a useful member. There are well-marked and instructive cases introduced to illustrate the various positions laid down, in this, a very important section of the volume.

TUMOURS OF BONE. Cartilaginous Tumour occurs in the early and middle periods of life, and presents two distinct forms, one peculiar to the outside of a Bone, the other to its interior. The latter form occurs in the smaller bones, the former attacks the larger. The substance composing these tumours is of a blueish or greyish white colour, and chemical analysis obtains from it the same results as from pure cartilage; such tumours are of slow growth, and strictly local. In the early stage, preparations of iodine and mercury may effect their gradual dispersion. Every other variety of tumour, to which the osseous tissue is subject, is passed in review; and the subject is concluded with a summary of facts, which cannot fail to be of service in assisting the diagnosis of these, often obscure, cases. Whilst on the subject of Pulsating Tumours of Bone, Mr. Stanley brings evidence to show that such tumours may be arrested in their progress by the ligature of the main artery of the limb; and that moreover, in two known instances, the ligature of the artery was followed by reparative processes in the bone, effecting the restoration of its natural size and firmness.

SCROFULA IN BONE. It appears to Mr. Stanley, that the bones are primarily affected in only a proportion of the Scrofulous Diseases of Joints, for in cases which he has carefully watched, and which exhibited the local and constitutional characters of Scrofula in a marked degree, inflammation was found in the synovial membrane, with tuberculous deposit in and about the joint, whilst in the bone no unsoundness existed. When, however, destruction of bone has taken place from Scrofula, no reproduction ever takes place.

MORBID GROWTHS FROM THE LOWER JAW. Eight varieties are described, which are accurately detailed. The following remark is not to be lightly regarded in these days of chloroformization.

"One consideration, it has appeared to me, belongs to all operations performed for the removal of either a portion or the whole of the Superior Maxillary Bone; namely, that they are cases in which a serious objection lies against the use of either chloroform or ether; for, inasmuch as by the influence of these agents in annihilating sensibility, the irritability of the glottis is weakened, if not wholly lost, there must be danger of a trickling of blood from the mouth into the glottis, without the excitement of a cough to expel it from the windpipe." (p. 288.) This objection does not apply so forcibly to operations upon the lower jaw;—but to guard against the possibility of blood descending towards the larynx, the patient, during the operation, should sit upright, without reclining in the least.

In taking leave of this volume, we must express our opinion, that it possesses the merit of being essentially practical, lucid, and well arranged. The materials, selected with judgment, indicate extensive observation and careful reflection; and the book is altogether of so useful a character, that no professional library will be complete without it.

SKETCHES OF THE MEDICAL TOPOGRAPHY AND NATIVE DISEASES OF THE GULF OF GUINEA, WESTERN AFRICA. By WILLIAM F. DANIELL, M.D., Assistant-Surgeon to the Forces, etc. pp. 200. London: 1849.

A lengthened residence on the Western Coast of Africa has given Dr. DANIELL many opportunities of observation; and in the present volume we have the fruits of his research and inquiries presented in the form of a highly interesting and instructive treatise, on the general and medical topography, the natural history, diseases, and customs of the inhabitants of the coasts of

the Bights of Benin and Biafra, and the islands of Fernando Po, Prince's, St. Thomas, and Anno Bona. The regions which he describes have an unenviable notoriety for insalubrity : yet the following paragraph well explains much of the fatality among Europeans visiting these parts. "Could those causes of disease which have been hitherto ascribed to climatorial alternations be more thoroughly investigated, I apprehend we should discover that no small number were founded on very inconclusive data. It is a well-known fact, that the notorious insalubrity of Africa has frequently served as the scape-goat on which the blame of those evil consequences (resulting from the reprehensible indulgence of dissipated courses) might be unreservedly thrown, without the risk of their being disputed or even questioned. When we seriously reflect on the impaired constitutions of two-thirds of the human beings who frequent these colonies, recklessly indifferent as to the price of human life, we require no further argument for the rational explanation of those abnormal states of the system that so largely swell the amount of victims, in the occasional and almost inexplicable pestilences which prevail in these regions." (p. 13.)

We hope that Dr. Daniell will one day favour his professional brethren with a good practical treatise on the Diseases of Western Africa. He is eminently qualified for the task ; and will thereby confer a great benefit. In the meantime, we heartily recommend his "Sketches of the Medical Topography of the Gulf of Guinea", as a work combining interesting topographical information, with knowledge likely to be of service to all engaged in the treatment of disease in those regions.

THE PHYSIOLOGY OF DIGESTION, considered with relation to the Principles of Dietetics. By ANDREW COMBE, M.D. Ninth Edition. Edited, and adapted to the present state of Physiological and Chemical Science, by JAMES COXE, M.D. pp. 191. Edinburgh: 1849.

Of the manner in which DR. COMBE has performed his task, of popularly explaining the Physiology of Digestion, and applying it to the Principles of Dietetics, and, consequently, to the preservation of health, there can be but one opinion. Whether we consider the book before us as a scientific treatise, or as a popular physiological work, it stands unrivalled for completeness of information, correctness of deduction, and clearness of diction. The labours of the most eminent contributors to our knowledge, in the various subdivisions of the subject, and the practical deductions, are expressed in a correct, simple, and convincing manner. The author and the editor show a praiseworthy caution in drawing deductions from meagre or uncertain data.

DR. COXE has ably discharged the trust bequeathed to him by Dr. Combe, of revising his work, and incorporating with it what was useful in recent researches. The latest discoveries and observations are skilfully embodied and applied. We can detect no omissions. Among the additions, we observe the observations of M. Bernard on the use of the pancreatic juice, and some observations on cod-liver oil, which are principally founded on the essay of Dr. C. J. B. Williams, published in this JOURNAL for January 1849.

MICROSCOPIC EXAMINATION OF THE WATER SUPPLIED TO THE INHABITANTS OF LONDON AND THE SUBURBAN DISTRICTS ; illustrated by Coloured Plates, exhibiting the living Animal and Vegetable Productions in the Thames and other Waters, as supplied by the several Companies ; with an Examination, Microscopic and General, of their Sources of Supply, as well as of the Henley-on-Thames and Watford Plans, etc. By ARTHUR HILL HASSALL, M.B., F.L.S., etc. 8vo. Pp. 66. London : 1850.

The work is so fully described in the title-page now transcribed, that it is not necessary for us to do more than commend it, as one well deserving of perusal. The horrible nature of the compound fluid, which the Londoners drink under the name of water, is well set forth.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

REPORT OF THE CATHERINE HOSPITAL AT STUTTGART, ON THE DISEASES OF CHILDREN.

The following valuable Report on the Diseases of Children, is extracted from the General Report of the Lying-in Department of the the Catherine Hospital at Stuttgart, from 1st July 1847, to 30th June 1848. It was communicated by Dr. ELSAESSER, superintendent of the department.

There were born, in the above period, 290 children (157 males and 133 females); of these, 48 (25 m. and 23 f.) were premature, and 11 (7 m. and 4 f.) still-born. The deaths were 37 (23 m. and 14 f.). The proportion of the still-born to the total births, was 1:26:36; of the still-born to those born alive, 1:25:36; of the deaths to the live births, 1:7:54.

ICTERUS NEONATORUM was observed in 93 males, and 69 females.

APHTHÆ were found in 34 males, and 23 females.

INFLAMMATIONS OF THE EYE were observed, sometimes alone, sometimes complicated with other affections, in 35 newly-born children, 21 males and 14 females. The termination was generally favourable: in a few cases only, ulcers formed in the cornea, leaving more or less opacity. In one case, violent inflammation of the left eye occurred on the eleventh day after birth, and was treated by leeches, calomel, etc. The disease, however, made progress, and on the tenth day, produced ulceration of the cornea, which was followed, in seven days, by prolapsus of the iris.

A fatal case of atrophy with syphilitic corneitis, occurred in the prematurely born child of a syphilitic woman, who had numerous condylomata. On the fourth day, violent inflammation of the eye took place, with profuse suppuration; leeches had no effect in moderating the inflammation, but it continued to increase, and an abscess formed on the cornea. A collyrium of nitrate of silver, with laudanum, in distilled water, was ordered: the atrophy was treated with a mixture containing disulphate of quinine; and aromatic baths and arrow-root were prescribed. The abscess in the cornea burst in two points, the child gradually wasted, and death took place on the tenth day after birth. On *post-mortem* examination, a notable quantity of serum was found in the fourth cerebral ventricle: the lungs and the other principal viscera were healthy.¹

DEBILITY (*Lebensschwäche*). Thirteen maturely born children died of this—seven males and six females. The children refused the breast; they rejected with pain, whatever was administered to them; but slept well. Vomiting, convulsions, and coldness of the extremities supervened; and finally, death. The autopsies generally revealed anæmia, rarely hyperæmia of the brain, with oedema and effusion into the ventricles. One of these children had petechiæ on the eighteenth day, and the muscles of the gluteal regions and feet felt of a stony hardness. On *post-mortem* examination, ecchymoses were found beneath the capsules of the kidneys, and miliary granulations on the surface of the spleen.

PLEURO-PNEUMONIA. This proved fatal to two children; to a premature male child, on the fourth day after birth, and to a mature twin male, on the second day. The first manifested only slight signs of life; on the day after

¹ The Editor of the *Journal für Kinderkrankheiten* suggests that, in this case, Dr. Elsaesser should have employed small doses of calomel and iodide of potassium, in conjunction with the tonic and nutritive remedies.

birth it was jaundiced and soporose, but still it swallowed, and took the breast. There was an absence of any individual symptoms, especially of those which should denote a severe affection of the lungs. On *post-mortem* examination, the brain and its membranes were found much hyperæmiated, and the substance of the brain was of a yellow colour. The right lung was healthy; the lower lobe of the left was mostly in a state of atelectasis; it could be inflated. The upper lobe, with the exception of the apex, was perfectly hepatized; the tissue here was very soft, and, on making a section, a large quantity of reddish fluid escaped: this part of the lung was incapable of being inflated. On the upper surface of this lobe there was a layer of recent, yellowish-grey plastic exudation, which could be easily removed. The costal pleura on the left side was strongly injected, of a dark red colour. The foramen ovale contained a plug of coagulated fibrin. The second case was that of a strong, well-developed twin-child, weighing 7lbs, which was born apparently dead, but soon revived and cried lustily. On the first day, it took the breast frequently and eagerly. On the second, it was drowsy, sucked no more, and did not even swallow milk squeezed into its mouth; the whole body was of a greyish-yellow colour. The abdomen was full and constipated. In the evening, the head felt hot; two leeches were therefore applied, which diminished the heat, but did not remove the drowsiness. On the morning of the third day, strong collapse was observed; the body became cold, and the child remained in a state of stupor until death. During life, the child had neither cough nor dyspnœa, nor any symptoms of general febrile disturbance; it only appeared somewhat thirsty at times. The autopsy revealed hyperæmia of the brain and of its membranes, with yellowness of the substance of the former. In the right pleural cavity there were two or three tablespoonfuls of reddish-brown flocculent exudation, coagulable by heat. The lung on this side was hard and compact; the greatest part of the upper lobe, a small part of the middle, and nearly the whole of the lower lobe were hepatized, granular on section, brittle, readily sinking in water, and not capable of being inflated. The surface of the lung was covered with a thin, reddish yellow exudation: the costal pleura was much injected, and likewise covered with a thin layer of plastic exudation.

This case affords some peculiar points of interest. 1. Pneumonia is not uncommon in newly-born children. Clermont-Lombard (*Archives Générales de Médecine*), makes this remark; and further observes, that pneumonia, or its sequelæ, are the cause of death in more than one-sixth of the children who die in the first week after birth. Vernois found hepatization of the lungs 113 times in 114 cases. On the other hand, pleuritis—at least the simple form, is rare. In the case before us, however, the pneumonia was accompanied with pleurisy. 2. It is remarkable, also, that cough (which is generally absent in the pneumonia of newly-born children), disturbance of respiration, and febrile reaction (except some thirst), in short, all symptoms of pulmonary congestion, were at least unobserved; while all the symptoms of congestion were referred to the brain. Moreover, the dyspnœa and accelerated respiration should stand in direct relation to the extent of hepatization; and here there was indubitable lobar pneumonia, and hepatization, without any disturbance of respiration. Valleix observes, that in complicated cases of pneumonia in newly-born children, there is scarcely any increased heat of skin; and relates a case of simple pneumonia, in which the heat of the surface was not raised during the whole course of the disease. Kluge, of Berlin, remarks, in his essay on the Pneumonia of Newly-born Children (*Medizin. Zeitung*, 1835, No. 34), that newly-born children lose their warmth and the red colour of their skin, become cold and bleached, and assume an ashy lead colour in pneumonia, even before there are any symptoms of impeded respiration. Perhaps the reaction in the pneumonia of children is imperfect, so that not even the presence of congestion, much less of inflammation, can be detected. Billard observes, that fever is absent in the parenchymatous inflammations

of newly-born children. Leger says, that pneumonia is almost always latent in children; and Valleix asserts that he found, in fourteen cases of pneumonia in newly-born children, one which was truly latent. Or, which seems more probable, the symptoms of reaction are often feebly developed through the frequently rapid progress of the disease, and the tender constitution of the patients, and thus quickly pass into collapse; or they are masked by complications, as by the cerebral affection in the present case. Hence many cases in newly-born children cannot be detected. 3. In the case under consideration, the left half of the thorax was larger than the right; and also, at least, within the last twenty-four hours, the complexion was of a greyish-yellow colour.

That pneumonia and pleurisy may even occur in the foetus, is placed beyond a doubt by trustworthy observations. But, in the present case, it must be regarded as equally certain, that the inflammation commenced more than twenty-four hours after birth, and then ran a rapid course. Valleix has related cases, in which hepatization became perfectly developed in from twenty-four to thirty hours.

PERITONITIS. Of this affection there died a male child, who, for two days after birth, was perfectly healthy, but was then seized with distension of the abdomen, tormina, and convulsions, refused the breast, and died on the third day, remarkably collapsed. On inspection of the body, the peritoneal cavity was found to contain about two tablespoonfuls of a yellowish serous plastic exudation, which was precipitated as a false membrane on the liver and spleen, but not on the intestines. The cerebral membranes were much injected.

ERYSIPELAS. Two children were seized with erysipelas of the face; one of whom, a male, died. He was taken ill on the seventh day, with erysipelas of the left eyelid, became drowsy, and frothed at the mouth. The erysipelas extended over the whole of the left cheek; violent fever and strong coma set in, and death occurred on the third day. No abnormal symptoms were found on dissection.

Four children, of whom three died, had erysipelas in the vicinity of the genital organs. Of those who died, one was a mature female child, the second a mature male, and the third a premature male. The history of the first and third cases is not remarkable; an anæmic state of the brain was the only abnormal appearance found on dissection. The second child was seized, on the fourteenth day after birth, with erysipelas of the genital and gluteal regions, great thirst, frequent pulse, and constipation. It was ordered to have a mild laxative, with aqueous tincture of rhubarb. On the seventeenth day after birth, an ill-looking abscess had formed at the root of the penis; the scrotum was of a dark blue colour; the erysipelas extended from the knees upwards, on the abdomen and back, as far as the lower ribs. On the eighteenth day, the abdomen was extremely tense, with distended veins; the scrotum was gangrenous; the upper part of the thigh also of a dark red colour, very tense; and death occurred, during a fit of convulsions, on the evening of this day, the fourth of the illness. *Post-mortem* examination revealed nothing abnormal in the cranial or thoracic cavities. The peritonæum was thickened and opaque in its parietal portion, and covered with dark red stellated patches of injection; in the cavity, especially at the bottom of the pelvis, were four tablespoonfuls of exudation, consisting of greenish briny serum and many yellow flocculi, which latter partly swam in the serum, and partly precipitated on the intestines. The liver was very large, about the size of that of a child five years old. The lining membrane of the right umbilical artery was somewhat discoloured, and contained a firm coagulum, but no pus.

CEREBRAL APOPLEXY. Five children were seized with symptoms of congestive apoplexy, of whom three (mature males) died. One of these had been brought into the world by gentle traction with the forceps. Three hours after birth, it began to moan, and would not take the breast; the abdomen was distended,

though not painful on pressure, and there was much eructation ; convulsions soon came on, and death took place on the second day. The autopsy brought to view hyperæmia of the meninges and of the brain ; the latter exhibited, on section, much punctiform vascularity. In the right pleural cavity there were three loth (one and a half ounce) of clear serous fluid.

The two other fatal cases were seized, on the tenth and twelfth days after birth, with drowsiness, vomiting, heat of head, and convulsions. The latter and the drowsiness increased, the body became cold, and death followed on the second day from the attack. In both these cases, the brain and its membranes were found hyperæmiated, and in one there was also a clear fluid exudation in both pleural cavities and in the peritonæum.

A mature child was born in a state of lividity and sopor. In a short time, it had stertorous breathing, a small pulse, cold skin, dilated pupils, and died twenty-six hours after birth. On *post-mortem* examination, the meninges were found much injected ; and the lateral ventricles contained a large quantity of water. On the inferior surface of the left posterior lobe of the brain, between the membranes, there was a large coagulum of blood ; and a similar one, of larger size, on the inferior surface of the left lobe of the cerebellum. The treatment consisted in leeching the head, cold applications, hip-baths, stimulant enemata ; laxatives, small doses of calomel, oxide of zinc, etc.

CONVULSIONS. This disease occurred singly, without any other, in eighteen children (ten males and eight females) ; only one case was fatal. A mature female child was perfectly healthy up to the eighth day after birth ; but on the eighth day it refused the breast, became pale, livid, soporose, and breathed with difficulty : the pulse was small, and there was vomiting and constipation. It was ordered to have laxatives, as well as small doses of calomel and oxide of zinc, with magnesia. No improvement resulted ; and it was only after the use of musk and ammoniated spirits of aniseed in small doses, with baths, that there seemed to be any amendment. On the sixth day, however, the child suddenly became, towards the evening, blue and cold, the pulse was scarcely perceptible, frothy mucus exuded from the nostrils at each expiration, and death occurred at eight P.M. On *post-mortem* examination, the brain was found hyperæmiated, and there was a large quantity of clear serum effused in the lateral ventricles and at the base of the brain. The lungs were congested and œdematous, and gave exit, on being cut into, to a quantity of sanguineous frothy fluid. The liver was very full of blood.

ATELECTASIS PULMONUM. This was observed in a high degree in four mature children (three males and one female). The first died on the third day, with symptoms of vital debility ; on the second day, there was commencing induration of the cellular tissue, and it was constantly in a state of stupor. The brain and its membranes were found hyperæmiated, and the lower lobe of the right lung in a state of atelectasis. The second child lived two days, and gave only very slight signs of life ; it died in convulsions. The brain was found in a state of anæmia ; and there was perfect atelectasis of the whole of the left lung, with œdema of the right. The third was brought into the world by the forceps ; it was apparently dead, but was immediately revived. It moaned ; mucus, stained with blood, flowed from the mouth ; the hands were blue and swollen ; and death occurred twelve hours after birth. On inspection, the brain was found highly œdematous, the lateral ventricles filled with serum, the left lung in a perfect state of atelectasis, and œdematous ; the right contained air, but was œdematous. This case is very similar to the fourth, which occurred in a male child, who was born after an easy labour, but died after six hours. Just after birth, he cried aloud once, but afterwards moaned until death. Respiration was irregular ; there was constant sopor ; the face was livid, and the body cold. On *post-mortem* examination, the brain and its membranes were found much injected. The substance of the brain exhibited much watery infiltration ; the lateral ventricles were filled with serum. The lungs were compact, with sharp edges, and were

in a state of atelectasis. Only a portion of the upper lobes contained air. The pleural cavities contained some serum. There was a moderate quantity of dark blood in the cavities of the heart.

These two latter cases are instances of an important complication of imperfect expansion of the lungs, with acute hydrocephalus and serous infiltration, in a high degree, of the cerebral substance. It is very probable, that the first morbid change was the production of congestion of the brain, soon amounting to congestive apoplexy, and, as a consequence, pressure on this organ. In this manner, the sensory function being impeded, the susceptibility of the lungs to the stimulus of the atmospheric air was destroyed; but especially the infantile organism was so weakened, that a perfect expansion of the chest, and, consequently, complete respiration, was impossible.

CEDEMA OF THE LUNGS. A male child was born at the full term, but after a tedious labour; it was apparently dead, but immediately revived. It appeared blue all over, and moaned in an extraordinary manner. Some blood was allowed to flow from the umbilical chord, sinapisms were applied to the calves of the legs, and enemata of camomile, with oil, were administered. The child, however, soon died. On *post-mortem* examination, there was found to be moderate hyperæmia of the brain, and some serum in the ventricles. In both pleural cavities there was some bloody serum. The upper lobe of the left, and the upper and middle lobes of the right lung, were œdematous, but still floated in water. The lower lobe of the left lung contained no air; the tissue was weak, soft, and in an extreme state of watery infiltration. The lower lobe of the right lung presented an analogous appearance, but in a less degree. There was nothing abnormal about the heart.

TUBERCULOSIS OF THE BRAIN. A very weakly female child refused the breast on the second day after birth, and became soporose. Both eyes were slightly inflamed. A mixture containing musk, with a few drops of *liquor cornu cervi succinatus*, was prescribed; hip-baths and sinapisms were also ordered. The drowsiness and weakness still increasing, half a drachm of Malaga wine was ordered to be added to each dose of the medicine. On the eleventh day, vomiting and diarrhœa set in; and the child died, extremely emaciated, on the twelfth day. At the autopsy, after both hemispheres of the brain were removed, the *centrum ovale* of Vieussens was found to contain small punctiform tubercles, of the size of millet-seed, or linseed; and one of the size of a pea, in a state of purulent softening. In the left optic thalamus there were many small miliary granulations, as large as pins' heads. Around these deposits, there was much small punctiform vascularity; the choroid plexuses were much injected. In the cerebellum, there was a rather large apoplectic clot. The ventricles contained some serum; on the posterior lobe of the cerebellum, between the membranes, there was a patch of yellowish exudation. Many of the mesenteric glands were found enlarged.

TETANUS. A mature male child was seized, on the sixth day after birth, with inflammation of the umbilicus: the chord had become separated on the preceding day. The inflammation soon proceeded to suppuration, and the child became strongly jaundiced, and very restless. On the night between the eighth and ninth days, the child cried frequently and loudly, but towards morning this cry subsided into a peculiar moan; and, at the same time, clonic convulsions occurred in the muscles of the face and jaw. The muscles of the eyes, neck, and arms were slightly convulsed; the feet were stiff. The paroxysms occurred, after the tenth day, every four or six minutes, and lasted half a minute each time. The application of leeches to the back part of the head, and the administration of small doses of tincture of opium, rendered the paroxysms less frequent; but they still returned every quarter of an hour, the pulse became weaker, the countenance livid, the pupils much dilated, and death imperceptibly supervened. On *post-mortem* examination, a large quantity of clear fluid was found beneath the dura mater of the spinal chord, especially in the lumbar region. The arachnoid membrane of the chord was through-

out of a yellowish-grey colour, with single hyperæmic spots. Between it and the pia mater in the lumbar legion, there was a considerable amount of yellowish exudation; the pia mater was much injected. The substance of the spinal chord, and of the brain, was very firm. On the surface of the brain, as well as in the lateral ventricles, there was an effusion of yellowish watery fluid; the brain and its membranes contained much blood. No abnormal appearance was observed in the pleural or peritoneal cavities, or in the umbilical vessels.

SOFTENING OF THE BRAIN. A well-developed male child gave only slight signs of life after it was born: it was in a constant state of torpor, and had a blue, livid countenance. On the second day, it was seized with violent epistaxis, and died. The membranes and substance of the brain were much injected; there was a little fluid in the ventricles; the brain itself was in a state of watery infiltration; the substance of the cerebellum was soft, like jelly, and formed a reddish grey mass (local softening). The posterior lobes of the cerebrum were in the same condition, but in a less degree; the heart was full of blood. This red softening must evidently be considered as the consequence of apoplexy, with effusion of blood in the cerebellum, as a mingling of blood with broken-up cerebral matter. A flow of blood from the Schneiderian membrane, in the form of epistaxis, produced death suddenly. The *post-mortem* appearances in this case explain clearly the low vitality perceived in the child though born at the full term, and properly developed. This form of softening of the brain (not dependent on inflammation) is, according to Billard, peculiar to new-born children, and a secondary result of congestion of the brain.

There were also noticed two cases of **CHOLERA**, two of **HYDROCELE**, two of **SWELLING OF THE MAMMARY GLANDS** in male children, and two remarkable cases of **CORYZA**. On this Coryza, which is peculiar to children, Dr. Elsässer remarks:—"In children at the breast, especially when newly-born, inflammation of the Schneiderian membrane manifests some peculiar symptoms, which depend on obstruction of the nostrils, especially at the upper orifices. A child, who has a severe attack of this disorder, does not breathe through the nose: it cannot suck and inspire air at the same time, so that it lets go the nipple as soon as it seizes it, and utters a pitiful cry. The same thing happens if it attempt to suck a finger introduced into the mouth; but fluids poured in readily pass down. Before it leaves the breast (and sometimes even independently of the act of sucking, especially at night), it shews all the symptoms of increasing dyspnoea, the countenance becomes blue, and the child is in a state of suffocation; and all the symptoms are renewed so often as it tries to suck. Temporary weaning during the height of the disease, and the use of cow's milk, diluted with anise tea, alleviate this condition, which will be removed by the internal use, several times a day, of small doses of calomel, with magnesia and sugar."

MALFORMATIONS. Of these are to be noticed:—

1. **UMBILICAL HERNIA.** This case occurred in a prematurely born male child, weighing three pounds, which died a few minutes after birth. The sternum was absent, so that the chest presented a depression in the middle line in front. The lungs were small, undeveloped, and contained a little air—the child having made a few feeble inspirations. The heart and diaphragm were normally developed; the peritoneal cavity was collapsed, and felt empty. At the umbilicus there was a hernia in the integuments of the chord, which were yellow and transparent. The sac of the hernia was about the size of an orange: it contained the liver, stomach, and the whole intestinal canal. At the limits of the swelling, and interiorly to the umbilicus, the spleen was found; it was remarkably large, much elongated, as was also the pancreas. The spleen and liver were very soft; the gall-bladder and the cystic duct were absent; the hepatic duct opened immediately into the duodenum; the venous canal was obliterated; the stomach was like an intestine in form.

The insertion of the diaphragm was deep below the inferior ribs, so that the thoracic cavity was much clongated, and the abdominal compressed. The intestines seemed to have a blind termination, at some distance in the abdomen from the anus. The kidneys were situated very high up; the femur and humerus were short, thick, and knotty; there was a varus in the left foot. On examining the head, the parietal and occipital bones were found covered with firm coagula, beneath the pericranium; the fontanelles were very large; the substance of the brain was normal. At the bottom of each orbit there was much firm cellular tissue, and a sac with amorphous contents, representing an eye. The eyelids were closed.

2. VARUS. One case of this was observed, in a female child, who was otherwise well formed. [*Medizinischer Correspondenzblatt*, Stuttgart, Bd. xix, No. 15; and *Journal für Kinderkrankheiten*, Jan. and Feb. 1850.]

SULPHUR IN CHOLERA.

DR. LORIE, of Pont-le-Voy, speaks favourably of the medicinal use of Sulphur in the *Journal des Con. Médico-Chir.* (October 1849); and in the same journal for the 1st of January, 1850, there is a paper by DR. CABARET, entitled "*Du Soufre sublimé dans le Période algide du Cholera.*" Notices on the same subject are given in our volume for 1849, pp. 345, 673, and 1116.

TRANSIENT ALBUMINURIA.

We find the following report of a discussion at the *Société de Biologie* in the *Gazette Médicale* for February 10, 1849:—"M. BOUCHAT detailed a case of Transient Albuminuria, dependent on passive sanguineous congestion. The patient laboured under an organic disease of the heart, and had general anasarca, accompanied by a red and congested condition of the surface. In these circumstances, albumen appeared in the urine. Bleeding to nearly ten ounces, removed the symptoms of general hyperæmia; and the urine forthwith ceased to be albuminous.

"M. Blot called the attention of the Society to the frequent production, during labour, of Transient Albuminuria, arising from the impeded circulation, and disappearing spontaneously. M. Gubler has several times observed the fact, already pointed out by M. Rayer, that obliteration of the renal veins can produce Albuminuria. M. Lebert insists on the necessity of combining microscopical with chemical examination. It would thus be easy to determine, whether the albumen exists in the urine in an amorphous state, or is partly furnished by the corpuscles of blood or of pus."

We believe that to Dr. Robinson, of Newcastle, belongs the merit of having first pointed out the important fact, that ligature of the emulgent veins induces Albuminuria, as a consequence of congestion of the kidneys. This, and other analogous facts, are fully set forth in Dr. Cormack's paper on PUERPERAL CONVULSIONS, contained in the June number of this Journal for 1849, as well as in other parts of our first volume.

It is now pretty generally known, that Albuminuria is not an absolute sign of organic renal disease; but that it rather is a sure indication of general hyperæmia, which may be the concomitant or precursor of an alteration in the structure of the kidney, or may merely be associated with a temporary congestion of that organ.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY,

TUESDAY, FEBRUARY 12, 1850.

DR. ADDISON, PRESIDENT, IN THE CHAIR.

CASE OF STRICTURE OF THE ŒSOPHAGUS, FATAL TWO YEARS AND THREE MONTHS AFTER ACCIDENTALLY SWALLOWING SOAP-LEES. By W. R. BASHAM, M.D. A woman, aged 22, was admitted into the Westminster Hospital, July 16, 1847, suffering from the ordinary symptoms of poisoning by a corrosive irritant. Five days previously she had drunk, by mistake, some of the soap-lees used in marble polishing, which consisted of a caustic solution of impure carbonate of soda. An Œsophagus tube at this time passed readily into the stomach. Under a soothing plan of treatment, with blisters, and calomel with opium, she steadily improved, and was discharged, at her own request, ten days after admission. Eleven months afterwards, on June 8th, 1848, she was again admitted, emaciated and weak, and unable to swallow either solids or fluids. The Œsophagus being examined with a small gum-elastic catheter (No. 8), a trifling obstruction was felt at a point corresponding to about an inch below the cricoid cartilage; and about an inch and a half or two inches lower down, another impediment was met with, which it required steady and prolonged pressure to overcome. The catheter was passed into the stomach daily, its size being gradually increased. After the first day of this treatment, the patient was able to swallow liquid food; but she could not obtain a passage for any solid portions of food. She increased in flesh and strength; and, on June 30th, was made an out-patient, but neglected to attend, and on July 18th was re-admitted, with aggravation of the symptoms. A blister was applied, and the catheter again passed with the same good effect as before. At the end of August she was made an out-patient, but remained as nurse in the hospital. In January, 1849, she left it. On the 10th of September, 1849, she was admitted for the fourth time. She was now more attenuated and exhausted: was quite unable to swallow even fluids, and the Stricture could not be passed. She died on the 19th September.

Autopsy. The body being examined, the upper third of the Œsophagus was found much dilated, and its cords thickened. Between the first and second Stricture, the tube was contracted to about the diameter of a No. 8 catheter. The second Stricture would not admit a probe from above; it was only from below upwards that a passage could be obtained. The author suggested the propriety of commencing in such cases the use of the Œsophageal bougie, as soon as the inflammatory condition of the parts has been subdued, though no positive symptoms of dysphagia yet present themselves, and of continuing its use daily for months, with the view of preventing the formation of Stricture.

CASE OF STRICTURE OF THE EUSTACHIAN TUBE, AND THE APPEARANCES PRESENTED ON A POST-MORTEM EXAMINATION; WITH REMARKS ON THE USE OF THE OTOSCOPE IN THE DIAGNOSIS OF DISEASES OF THE EAR. By JOSEPH TOYNBEE, F.R.S. The Otoscope consists of an elastic tube eighteen inches long, and about half an inch in diameter, each extremity having attached to it a piece of ivory or ebony. One end of this tube being placed in the external meatus of the patient, the other is inserted in that of the surgeon, and by this means sounds emanating from the tympanic cavity of the patient can be distinctly heard by the medical man. The sound produced by the passage of air into the tympanic cavity, when the organ of hearing is healthy, consists of a series of very faint cracks, which are distinctly appreciable by the otoscope.

TUESDAY, FEBRUARY 26, 1850.

DR. ADDISON, PRESIDENT, IN THE CHAIR.

PROXIMATE CAUSE OF ALBUMINOUS URINE AND DROPSY: PATHOLOGY OF THE RENAL BLOOD-VESSELS IN BRIGHT'S DISEASE. BY GEORGE JOHNSON, M.D., ASSISTANT-PHYSICIAN TO KING'S COLLEGE HOSPITAL. The author, in accordance with Henle's description of the arterial tunics, had observed, that the renal arteries contain two layers of muscular fibres, the inner being longitudinal, and the outer circular. In all cases of chronic renal disease, with greater or less destruction of the secreting cells and tubes, the author had observed great hypertrophy of the arterial walls, the canal of the vessels remaining pervious, and of the normal size, until the extreme stage of the disease, when an accumulation of oil-globules frequently occurs within them. The Malpighian capillaries, in the same cases, are also much thickened, but present no appearance of muscular fibre. In the last stages, oil-globules are occasionally seen within or upon them. The intertubular capillaries and the veins, present no appearance of thickening. The author referred to the late Dr. John Reid's observations on the phenomena of asphyxia, and to Dr. Alison's on the capillary circulation, and its dependence on the vital attraction exerted upon the blood by the processes of nutrition and secretion. The escape of serum from the Malpighian capillaries, and its consequent mixture with the urine, and the serous effusion into the areolar tissue and the serous cavities, result from impeded capillary circulation, consequent on the retention of urinary excrementitious matters in the blood, the obstruction being analogous to that which Dr. Reid proved to exist during the process of asphyxia. The obstruction occurs in the intertubular capillaries of the kidney, and is the cause of the remarkable hypertrophy of the Malpighian capillaries, and of the arterial tunics. The obstruction in the systemic capillaries would account for the hypertrophy of the left ventricle of the heart, so frequently observed in cases of chronic renal dropsy, without manifest disease of the valves or of the vessels. The author then referred to some pathological phenomena, probably connected with impeded capillary circulation, and in this respect analogous to those before mentioned—e.g., serous effusion into the pulmonary cells in slow asphyxia; hypertrophy of the right ventricle of the heart in cases of chronic asthma; sudden death from the entrance of air into the veins; and the frequent connexion of cerebral hæmorrhage with renal disease.

DR. CHARLES J. B. WILLIAMS said that, Dr. Johnson, in his former paper, had described Dr. Bright's disease of the kidney, as a state of fatty degeneration of that organ. The author's present views more nearly coincided with those expressed by him (Dr. W.) in the discussion on the former paper; when he had stated, not only that other kinds of deposits were often met with, but also that more influence ought to be attributed to the state of the blood-vessels. He could not agree with the author, that the congested state of the vessels was secondary to the derangement in the excreting cells of the kidney; he believed that the latter state was only the result of the altered action of the blood-vessels. He was warranted in this view by frequently observing albuminuria to result as a secondary affection, from disease of the right side of the heart, causing a general congestion of the venous system. He had the greatest respect for his friend, Professor Alison, but he could not admit the existence of his vital attraction and repulsion. In observing what occurred on applying any irritant to the web of the frog's foot, under the microscope, it was found that the minute arteries were first greatly contracted, and that the congestion occurred afterwards.

DR. SNOW, MR. LE GROS CLARK, DR. BLACK, MR. PAGET, MR. BRANSBY COOPER, DR. COPLAND, and DR. DANIELL made some remarks having, more or less, reference to Dr. Johnson's paper.

ANNIVERSARY MEETING, MARCH 1, 1850.

DR. ADDISON, PRESIDENT, IN THE CHAIR.

REPORT OF THE PRESIDENT AND COUNCIL. We have only room for an abstract of this document.

The total number of Fellows on March 1, 1849, was 578—at the present time it is 587—26 new Fellows having been elected into the Society, while the number of those who have ceased to be Fellows, whether from death or other cause, is 17. Of the 587 Fellows who now compose the Society, 30 are Honorary Fellows, 11 British, and 19 Foreign, and 557 are Ordinary Fellows—308 Resident, and 249 Non-Resident.

<i>The Years.</i>	1843-4.	1848-9.	1849-50.
Total Number of Fellows in August	501	578	578
Number of Fellows who have paid the Annual Subscription.....	235	284	292
Receipts from Annual Subscriptions, Admissions, and Composition Fees.....	£ s. d. 973 : 7 : 0	£ s. d. 1102 : 10 : 0	£ s. d. 1108 : 16 : 0
Receipts from Sales of Transactions, etc., Fines and Interest of Funded Property	109 : 18 : 10	103 : 19 : 9	115 : 12 : 0
Total Income	1083 : 5 : 10	1206 : 9 : 9	1224 : 8 : 0
Total Expenditure, exclusive of the Purchase of Stock	954 : 14 : 1	1104 : 9 : 10	1075 : 7 : 6
Amount of Stock purchased	100 : 0 : 0	500 : 0 : 0	—
Amount of Stock in the Funds ...	1100 : 0 : 0	2700 : 0 : 0	2700 : 0 : 0

While the total income of the Society has increased, the actual expenditure has been less than in the preceding year. The diminution has taken place in Current Expenses, Incidental Expenses, and Expenses of the Volume of Transactions ; while the sum expended in adding to the property of the Society, exclusive of money funded, has been much larger than in the preceding year.

ANALYSIS OF EXPENDITURE.

<i>Current Expenses.</i>	£ s. d.	£ s. d.
Rent	202 15 0	
Insurance of Library	13 10 0	
Sub-Librarian's Salary	140 0 0	
Petty Cash... ..	64 0 3	
Page's Wages and Clothes	29 11 6	
Printing and Stationery	24 18 3	
Gas	3 2 3	
Coals	20 0 0	
Glazier	7 11 0	
Chandler	10 19 3	
Winding and Cleaning Clocks	1 11 6	
Carried forward		517 19 0

Current Expenses, brought forward		£517 19 0
<i>Incidental Expenses.</i>		
Printing New Bye-laws, Supplement to Catalogue, Carpenter, Ironmonger, etc.		37 17 5
Expenses of Volume XXXII		130 12 0
<i>Additions to the Property of the Society.</i>		
Books Purchased		354 12 4
Binding of Books		23 2 9
Sydenham, Cavendish, and Ray Societies	9 9 0	
Pedestal for the Bust of Dr. Elliotson	1 15 0	
		388 19 1

Total Expenditure... .. £1,075 7 6

The Council have still held in view the object of rendering the library as perfect as possible, and the librarians, during the past year, have been actively engaged in carrying into effect the recommendations of the Library Committee appointed in 1847. In the last twelve months, 800 works (upwards of 1,000 volumes) have been purchased; and, in the course of the last three years, more than 1,600 works have been added to the library, which now includes nearly 22,000 volumes. It will be observed that nearly two-fifths of the whole expenditure has been applied to the improvement of the library. A manuscript classed "Catalogue of the more Important Works in the Library", has been compiled and presented to the Society by Mr. Williams, the sub-librarian. This volume is highly creditable to the Society's sub-librarian.

NEW BYE-LAWS RECOMMENDED BY THE COUNCIL, AND CONFIRMED BY THE SOCIETY. 1. "Every person elected a Fellow of the Society, and living within seven miles of the General Post-office, shall, previously to his admission, pay to the Society the sum of six guineas as an admission-fee, and shall also further contribute the sum of three guineas annually. But every Fellow may, after the payment of the admission-fee, compound for his annual contribution, by paying at once the sum of forty-five guineas; every Fellow who has paid five annual contributions may compound for all future annual contributions by paying at once the sum of thirty-nine guineas; every Fellow who has paid ten annual contributions may compound for all future annual contributions by paying at once the sum of thirty-three guineas; every Fellow who has paid fifteen annual contributions may compound for all future annual contributions by paying at once the sum of twenty-seven guineas; every Fellow who has paid twenty annual contributions may compound for all future annual contributions by paying at once the sum of twenty-one guineas; every Fellow who has paid twenty-five annual contributions may compound for all future annual contributions by paying at once the sum of fifteen guineas; and every Fellow who has paid thirty annual contributions may compound for all future annual contributions by paying at once the sum of five guineas.

2. "All sums of money, paid to the Society as composition-fees in lieu of annual contributions, shall be invested in the names of the trustees in such government, or other securities, as shall be approved of, and directed by the Council. The *principal* of these sums of money shall not be expended without the sanction of a general meeting of the Society, but the interest thereof shall be paid by the trustees to the treasurers for the purposes of the current expenditure of the Society."

ELECTION OF OFFICE-BEARERS. DR. WEBSTER, in a luminous and unanswerable speech,¹ exposed the vicious effects of the present system, as manifested from year to year in the "House-lists", and objectionable proceedings of the Referees, as regarded the Transactions. A great muster having been

¹ Fully reported at p. 310 of the *Lancet* for 9th March.

anticipated of reformers, and a rumour being afloat that they were tolerably organized, and might try to change certain names in the House-list, the attendance of all parties was very large; and, strange to say, the nominees of the Council were with difficulty carried! It is painful and invidious to attack bad laws through individuals, and we hope that ere another 1st of March, the abolition of the House-list will avert such another trial of strength—one so dangerous, not only to the peace, but to the existence of the Society.

In analyzing the division, it must be recollected, that the twenty-one members of the late Council, the ten new members, the twenty-three members of Committee of Referees, all used their influence against the reformers. Take away these fifty-four (one of the referees is also a councillor), and where is the majority! SEVENTY-FIVE FELLOWS recorded their votes against a self-elected executive.

THE LIST OF OFFICE BEARERS. *President*: Thomas Addison, M.D. *Vice-Presidents*: George Burrows, M.D., F.R.S.; John Thomson, M.D.; Henry Alexander, F.R.S.; Samuel Solly, F.R.S. *Treasurers*: Robert Bentley Todd, M.D., F.R.S.; Benjamin Phillips, F.R.S. *Secretaries*: Seth Thompson, M.D.; Charles Hawkins. *Librarians*: John Hennen, M.D.; James Dixon. *Members of Council*: George Cursham, M.D.; George Gregory, M.D.; William Macintyre, M.D.; Alexander John Sutherland, M.D., F.R.S.; Charles J. B. Williams, M.D., F.R.S.; James Clayton; Thomas B. Curling; William Fergusson, F.R.S.; Henry Charles Johnson; Samuel A. Lane.

MISCELLANEOUS INTELLIGENCE.

STATISTICS OF THE PARISIAN HOSPITALS FOR THE INSANE. 1. *Charenton*. On January 1st, 1849, there were 445 inmates—228 males and 217 females. During the year, there were 171 admissions—107 males and 64 females; discharged cured, 24 males and 20 females; escaped, 2 males and 1 female; discharged at the request of friends, or transferred to another establishment, 35 males and 28 females; died, 45 males and 16 females. On January 1st, 1850, the population was 445—231 males and 214 females.

2. *Salpêtrière*. On January 1st, 1849, there were 1471 insane patients in this institution. During the year, there were 694 admissions; 219 were discharged cured; 72 were improved; 11 escaped; 33 were dismissed at the request of friends, or transferred to other establishments. The severity of the cholera in the institution raised the cypher of mortality to 599. On January 1st, 1850, the population was 1231.

3. *Bicêtre*. On 1st January, 1849, the number of inmates was 796; admissions during the year, 657; total 1453. There were dismissed cured, 211; ameliorated, 27; escaped, 21; transferred to asylums in the departments, 16; at the request of their family, or sent to their native country, 73; deaths 289;—leaving, on the 1st January 1850, a population of 816.

The number of admissions into the Salpêtrière and Bicêtre in 1849 (1350) is rather less than that for 1848 (1354). The numbers for 1847 and 1846 are 1230 and 1331. These statistical results afford a sufficient reply to the assertion, that the late political disturbances have increased the number of the insane. [*Annales Médico-Psychologiques*, January 1850.]

THE METROPOLITAN POLICE. According to the Parliamentary Report just published, the medical expenses incurred on behalf of the Metropolitan Police, amounted, during the past year, to 2376*l.* 6*s.* 7*d.* The salary of the Superintending-Surgeon, Mr. Fisher, is 600*l.*, and there are sixty-two district-surgeons, at salaries varying from 4*l.* to 72*l.* per annum, making a total of 1860*l.* 7*s.* 6*d.* Medical attendance, medicines, etc., for destitute prisoners, and for poor persons in cases of accidents, etc., in the public thoroughfares, cost 519*l.* 15*s.* 1*d.*

ROYAL COLLEGE OF SURGEONS. TWO JACKSONIAN PRIZES have been awarded by the College. Henry Lee, Esq., of Dover-street, Piccadilly, has

obtained one, for a work on the Causes, Consequences, and Treatment of Purulent Deposits; the other has been adjudged to Peter Hincks Bird, Esq., of Birmingham, for an essay on the Nature and Treatment of Erysipelas.

RUMOURED UNION OF THE ROYAL MEDICAL AND CHIRURGICAL, WITH THE PATHOLOGICAL SOCIETY. We understand that some of the best and most active friends of both institutions are anxious to bring about a junction. It is proposed, that the united societies meet weekly, and that each alternate meeting be entirely devoted to Pathology and Pathological Anatomy.

TESTIMONIAL TO THOMAS S. FLETCHER, Esq., BROOMSGROVE. On Saturday, 9th March, a silver tea-service was presented to Thomas Fletcher, Esq., in testimony of his assiduous exertions during the prevalence of the cholera, in the summer of 1849. The coffee-pot and tea-pot bore the following inscription:—"Presented to T. S. Fletcher, Esq., surgeon, by the inhabitants of Stoke Prior and a few other friends, to mark their sense of his unwearied exertions, professional skill, and great kindness to the poor, during the prevalence of the cholera in the summer of 1849."

APPOINTMENT.

GOODFELLOW, Dr. S. J., appointed Lecturer on Medical Jurisprudence in the Middlesex Hospital School of Medicine, in the room of Dr. R. G. LATHAM, resigned.

OBITUARY.

ANDERSON, Thomas, Esq., Surgeon, at Selkirk, aged 63, on 7th April.

BELLINGHAM, Dr. W. H., at Pisa, on 31st March.

BURROW, T. D., Esq., Surgeon, at Settle, Yorkshire, aged 53, on 14th March.

CAPURON, M., the distinguished medical jurist, of Paris, last week.

GARRIE, James, Esq., Surgeon, at Morningside, Edinburgh, on 9th April.

HARRINGTON, HENRY, M.D., son of the late J. H. Harrington, Esq., Member of the Council, Bengal, 10th April, at Pisa.

HOLT, H. T., Esq., Surgeon-accoucheur, at Great College Street, Westminster, aged 66, on 26th March.

LAUDEN, Dr. W. P., at Sloane Street, Chelsea, on 1st April.

MACDONNELL, Dr. G. B., H.E.I.C.S., on board the *Indus* steamer, off Malta, on 9th April.

NEVILLE, Edward, Esq., House-Surgeon to the Westminster Hospital, aged 22, on the 20th March.

PAYNE, —, Esq., Surgeon, of Plymouth, drowned in the wreck of the *Royal Adelaide* steamer, off Margate, on the 30th March.

POTTS, Dr. L. H., aged 60, on 23rd March.

PROUT, William, M.D., F.R.S., in Sackville Street, aged 64, on 9th April. The deceased was well celebrated for his valuable contributions to medical science.

ROBERTS, William, Esq., Surgeon R.N., on the coast of Africa, on 6th Dec., 1849.

ROGERSON, —, Esq., Surgeon and Coroner of the borough of Wigan, of diseased heart and apoplexy, lately.

BOOKS RECEIVED.

BALFOUR, Statistics of Cholera. Madras: 1849. **COMBE (Dr. A.)** on the Physiology of Digestion. Ninth Edition. By JAMES COXE, M.D. Edinburgh: 1849. **Cox** on Cholera. London and Bridgend: 1850. **FORBES' Physician's Holiday.** Second Edition. London: 1850. **HASSALL, Microscopic Examination of Water** supplied to London. London: 1850. **NELSON** on the Principles of Health and Disease. London: 1850. **PROCEEDINGS of Edinburgh Obstetric Society for 1848-49.** Edinburgh: 1850. **REDFERN, Abnormal Nutrition of Articular Cartilages.** Edinburgh: 1850. **REPORT (second) of Somerset County Asylum.** Wells: 1850. **THOMSON (Spencer, M.D.)** on Temperance and Total Abstinence. London: 1850. **TILT** on Diseases of Menstruation. London: 1850. **WRIGHT (Samuel),** Pathological Researches on Death from Suffocation, etc. London: 1850.